"Our Own"

FITTERS' HAND BOOK

The Novelty Iron Co.

CANTON, OHIO, U. S. A.

INTERNATIONAL

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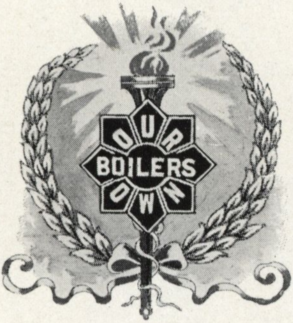
"OUR OWN"
Fitters' Hand Book

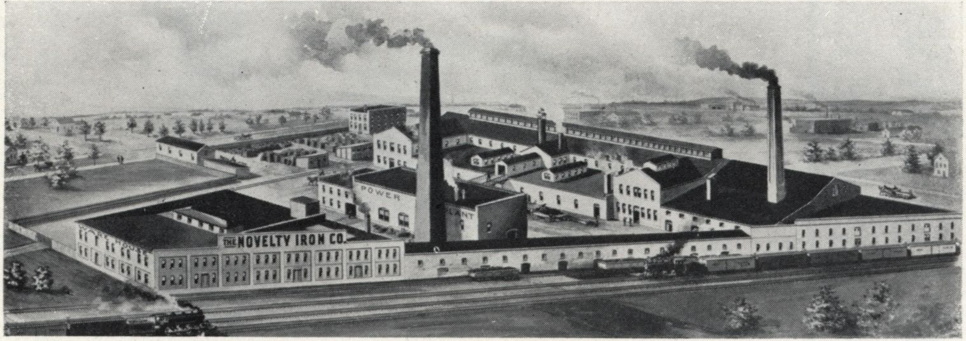
1910



Prices Quoted Herein Supersede all Former Lists and are Subject to Change Without Notice :: :: :: :: :: :: :: ::

THE NOVELTY IRON CO.
CANTON, OHIO, U. S. A.

THE CARGILL COMPANY, GRAND RAPIDS



OUR PLANT

FOREWORD

IN presenting this new edition of "Our Own" Fitter's Hand Book, we invite a careful observation of the wide range of capacities, and the large variety of styles listed and illustrated.

It has been our constant aim and study to make "Our Own" Hot Water and Steam Boilers the most Durable, Economical, and Efficient on the market today, and that we have succeeded is vouched for by the vast increase in our sales since they have been on the market.

Our line offers a selection from the small heater for domestic use up to the largest Steam and Hot Water Boilers required for Heating Purposes.

As will be noted by the range of capacities appearing on page 68 of this book, it will be observed that in Hot Water Boilers, the capacities range from 250 to 13,750 sq. ft. and in Steam Boilers from 175 to 8,300 sq. ft.

Larger capacities are arrived at by a battery arrangement of two or more boilers to suit the requirements.

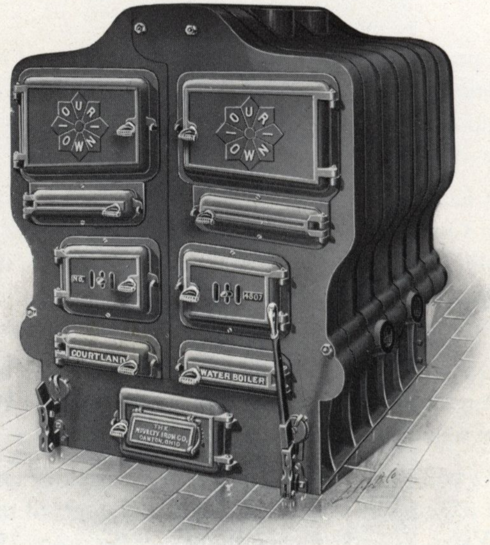
Our aim in the future will be to maintain the high standard to which we have brought the "Our Own", and trust that our efforts will merit the approval of our friends and patrons who have so generously aided us in the past.

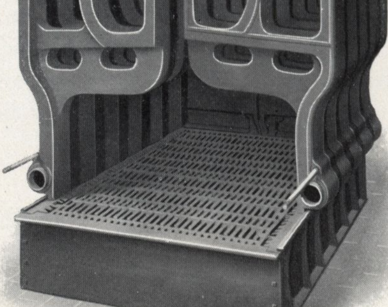
Very truly yours,

THE NOVELTY IRON CO.

"Courtland"

HOT WATER BOILERS





"Courtland"

HOT WATER BOILERS

Heavy Duty Boiler
Taper Push Nipple Joints
Extra Heavy Grate
Economical, Durable and Efficient

DIMENSIONS AND CAPACITIES

No. of Boiler	†No. of Sections	*Length of Boiler	Size of Grate	No. and Size Outlets	No. and Size Inlets	Founda-tion	Rating See Note	Price Complete
4805	5	54	48x43	2—6″	2-6″	54x 49	6750	$1535.00
4806	6	64½	48x53½	2—6″	2—6″	54x 59½	7750	1672.00
4807	7	75	48x64	2—6″	2—6″	54x 70	9250	1922.00
4808	8	85½	48x74½	3—6″	3—6″	54x 80½	10750	2172.00
4809	9	96	48x85	3—6″	3—6″	54x 91	12250	2422.00
4810	10	106½	48x95½	3—6″	3-6″	54x101½	13750	2672.00

Height to top of outlet, 80 inches.

Total width, 67 inches.

Size smoke pipe, 20 inches.

* Add 20 inches to length to allow for smoke-hood.

† Sections are in halves.

Extra tappings can be provided if desired.

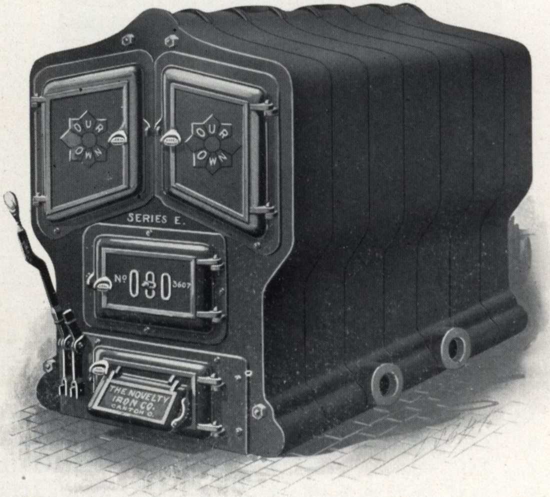
Do not bush flow pipe openings—connect all of them full size to the main.

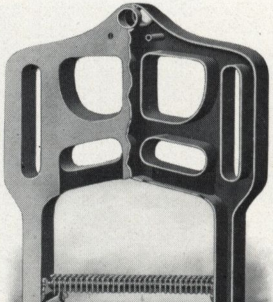
When soft coal is used for fuel, one size larger boiler is required than when hard coal is used.

See Note on Page 56

36 Inch Series "E"

HOT WATER BOILERS





Series "E"

HOT WATER BOILERS

Heavy Duty Boiler
Taper Push Nipple Joints
No Drums nor Headers
Extra Large Flues
Rocking and Dumping Grate
Adapted to All Kinds of Fuel

DIMENSIONS AND CAPACITIES

No. of Boiler	No. of Sections	*Length of Boiler	Size of Grate	No. and Size Outlets	No. and Size Inlets	Foundation	Rating See Note	Price Complete
3606	6	44	36x36	3—4"	3—4"	50x44	3050	$ 870.00
3607	7	51	36x44	3—4"	3—4"	50x51	3625	990.00
3608	8	58	36x51	4—4"	4—4"	50x58	4200	1110.00
3609	9	65	36x58	4—4"	4—4"	50x65	4775	1230.00
3610	10	72	36x65	4—4"	4—4"	50x72	5350	1350.00
3611	11	79	36x72	5—4"	5—4"	50x79	5925	1470.00
3612	12	86	36x80	5—4"	5—4"	50x86	6500	1590.00

Height to top of outlet, 68 inches.

Total width, 53 inches.

Size smoke pipe, 16 inches.

* Add 14 inches to length of boiler to allow for smoke-hood.

Rear grates can be removed or bricked off if desired.

Extra tappings can be provided if desired.

Do not bush flow pipe openings—connect all of them full size to the main.

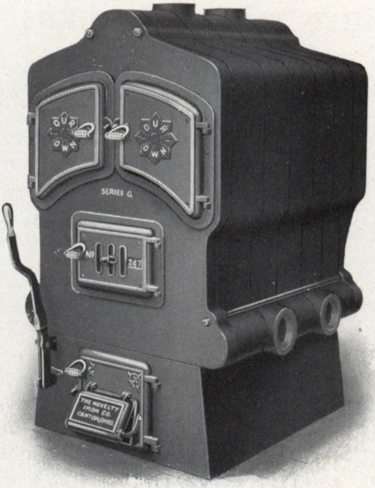
When soft coal is used for fuel, one size larger boiler is required than when hard coal is used.

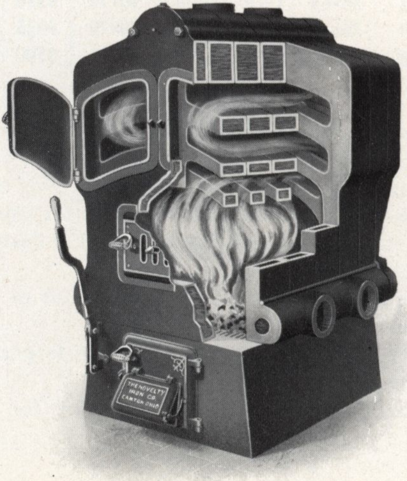
Arranged for pipe coil for heating water for domestic purposes.

See Note on Page 56

24 Inch Series "G"

HOT WATER BOILERS


OUR OWN
OUR OWN
SERIES G.
NP
247
THE NOVELTY IRON CO. CANTON, OHIO.



24 Inch Series "G"

HOT WATER BOILERS

**Taper Push Nipple Joints
Large Flues, Easily Cleaned
Vertical Circulation
Rocking and Dumping Grate
Burns Any Kind of Fuel**

DIMENSIONS AND CAPACITIES

No. of Boiler	No. of Sections	*Length of Boiler	Size of Grate	No. and Size Outlets	No. and Size Inlets	Foundation	Rating See Note	Price Complete
245	5	30	24x18	1—4″	1—4″	24x32	1100	$363.00
246	6	36	24x24	2—4″	2—4″	30x32	1450	459.00
247	7	42	24x30	2–4″	2—4″	36x32	1800	546.00
248	8	48	24x36	2—4″	2—4′	42x32	2150	637.50
249	9	54	24x42	3—4″	3—4″	48x32	2450	711.00
250	10	60	24x48	3—4″	3—4″	54x32	2700	771.00

Height to top of outlet, 60 inches.

Total width, 36 inches.

Size smoke pipe, 12 inches.

* Add 9 inches to length to allow for smoke-hood.

Extra tappings can be provided if desired.

Do not bush flow pipe openings—connect all of them full size to the main.

When soft coal is used for fuel, one size larger boiler is required than when hard coal is used.

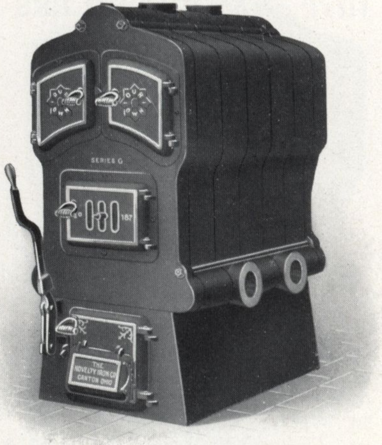
Arranged for pipe coil for heating water for domestic purposes.

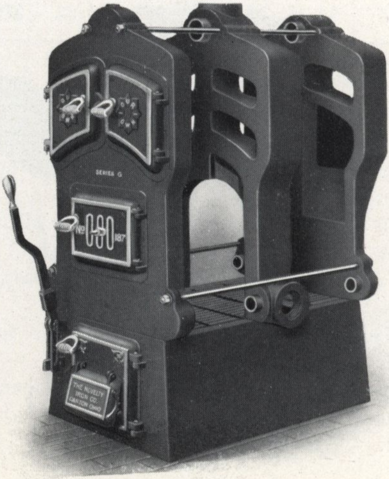
Can be equipped with extra large fire door opening suitable for burning wood.

See Note on Page 56

18 Inch Series "G"

HOT WATER BOILERS


SERIES G
No 0
187
THE NOVELTY IRON CO. CANTON, OHIO


SERIES G
No 0
187
THE NOVELTY IRON CO. CANTON OHIO

18 Inch Series "G"

HOT WATER BOILERS

Taper Push Nipple Joints
Large Flues, Easily Cleaned
Vertical Circulation
Rocking and Dumping Grate
Burns Any Kind of Fuel

DIMENSIONS AND CAPACITIES

No. of Boiler	No. of Sections	*Length of Boiler	Size of Grate	No. and Size Outlets	No. and Size Inlets	Foundation	Rating See Note	Price Complete
185	5	30	18x18	1—3"	1—3"	24x25	600	$228.00
186	6	36	18x24	2—3"	2—3"	30x25	775	283.50
187	7	42	18x30	2—3"	2—3"	36x25	1000	330.00
188	8	48	18x36	2—3"	2—3"	42x25	1250	390.00

Height to top of outlet, 55 inches.

Total width, 28 inches.

Size smoke pipe, 9 inches.

* Add 9 inches to length of boiler to allow for smoke-hood.

Extra tappings can be provided if desired.

Do not bush flow pipe outlets—connect all of them full size to the main.

When soft coal is used for fuel, one size larger boiler is required than when hard coal is used.

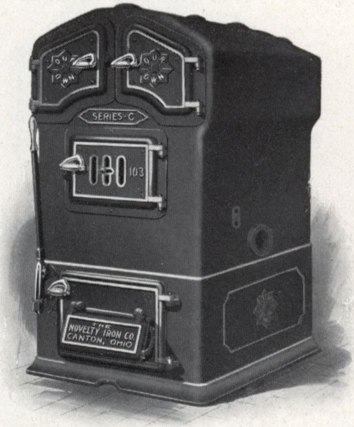
Arranged for pipe coil for heating water for domestic purposes.

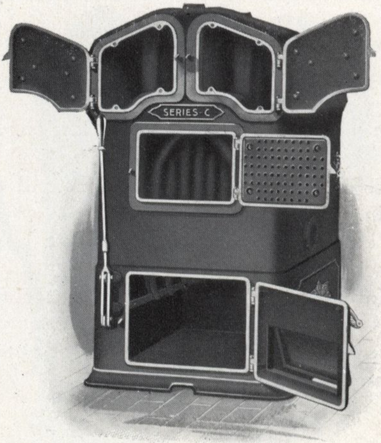
Can be equipped with extra large fire door opening suitable for burning wood.

See Note on Page 56

Series "C"

HOT WATER BOILERS





Series "C"

HOT WATER BOILERS

Single Casting Above Ashpit, No Joints
Water Ways Free from Bottom to Top
Rocking and Dumping Grate
Additional Heating Surface by Means of Drop Tubes
The Only Perfect Boiler of Its Type on the Market

DIMENSIONS AND CAPACITIES

No. of Boiler	Height to Top of Outlet	*Length of Boiler	Width of Boiler	Size of Grate	Size Outlets	Size Inlets	Size Smoke Pipe	Rating See Note	Price Complete
101	46	22	24	16x12	3	3	7	300	$136.20
102	46	28	24	16x18	3	3	7	400	166.80
103	46	34	24	16x24	3	3	7	550	212.40
104	49	34	30	20x24	4	4	9	700	247.80

* Add 10 inches to length of Nos. 101, 102 and 103 to allow for smoke-hood.

* Add 11½ inches to length of No. 104 to allow for smoke-hood.

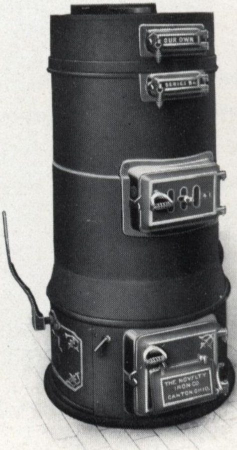
When soft coal is used for fuel, one size larger boiler is required than when hard coal is used.

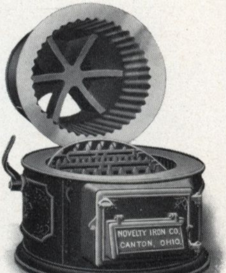
Arranged for pipe coil for heating water for domestic purposes.

See Note on Page 56

Series "B"

HOT WATER BOILERS





Series "B"

HOT WATER BOILERS

Self Cleaning Heating Surface
Corrugated Firepot
Vertical Circulation, Drains Perfectly
Narrow Waterways
Rocking and Dumping Grate

DIMENSIONS AND CAPACITIES

No. of Boiler	Height of Boiler	Diam. of Boiler	Diam. of Grate	Size Outlets	Size Inlets	Size Smoke Pipe	Ratings See Note	Price Complete
*15	46	20	15	3	3	6	250	$109.80
16	50	20	15	3	3	6	300	122.10
*20	50	24	17	3	3	7	350	137.40
21	54	24	17	3	3	7	400	152.70
*30	53	28	19	3	3	8	450	180.00
31	57	28	19	3	3	8	500	196.50
*40	53	30	21	4	4	9	575	216.00
41	58	30	21	4	4	9	650	241.50

These boilers are always shipped with single outlets, unless otherwise ordered.

Boilers marked thus (*) do not have top section as shown in cut.

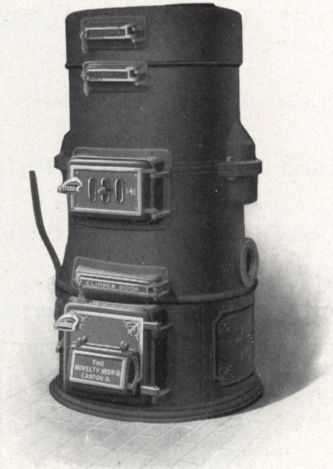
When soft coal is used for fuel, one size larger boiler is required than when hard coal is used.

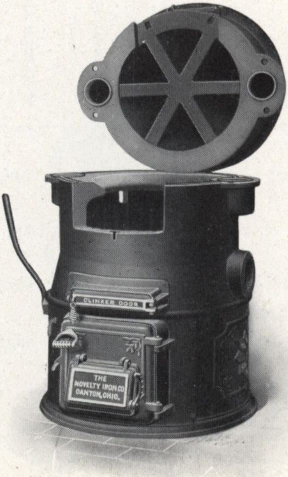
Arranged for pipe coil for heating water for domestic purposes.

See Note on Page 56

Series "F"

HOT WATER BOILERS





Series "F"

HOT WATER BOILERS

Self Cleaning Heating Surface
Arched Corrugated Firepot
Taper Push Nipple Joints
Rocking and Dumping Grate
Burns Any Kind of Fuel

DIMENSIONS AND CAPACITIES

No. of Boiler	No. of Sections	Height to Top of Outlet	Diam. of Boiler	Diam. of Grate	Size Outlets	Size Inlets	Size Smoke Pipe	Rating See Note	Price Complete
*130	2	49	28	19	3	3	8	450	$168.60
131	3	53	28	19	3	3	8	500	183.90
*140	2	49	30	21	4	4	9	575	202.50
141	3	53	30	21	4	4	9	650	225.90
*150	2	49	35	25	4	4	10	750	256.80
151	3	53	35	25	4	4	10	850	274.80
*160	2	49	38	28	5	5	11	1000	303.00
161	3	53	38	28	5	5	11	1150	333.00

Boilers marked thus (*) do not have top section as shown in cut.

Unless specified, boilers will be shipped with single outlets.

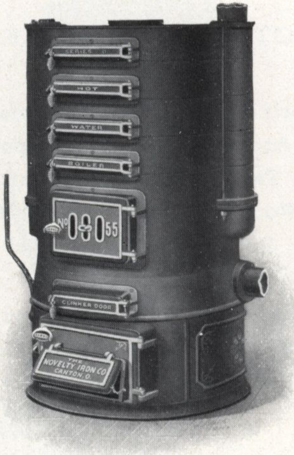
When soft coal is used for fuel, one size larger boiler is required than when hard coal is used.

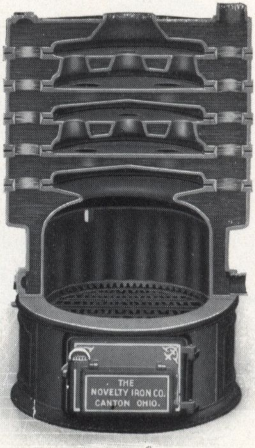
Arranged for pipe coil for heating water for domestic purposes.

See Note on Page 56

Series "D"

HOT WATER BOILERS





Series "D"

HOT WATER BOILERS

Arched Corrugated Firepot
Has Concaved Sections
Taper Push Nipples
No Rubber Nor Asbestos Packing
Rocking and Dumping Grate

DIMENSIONS AND CAPACITIES

No. of Boiler	No. of Sections	Height to Top of Outlet	Diameter of Boiler	Diameter of Grate	Size Outlets	Size Inlets	Size Smoke Pipe	Rating See Note	Price Complete
33	3	46	28	19	3	3	9	350	$151.20
34	4	51	28	19	3	3	9	400	169.50
35	5	56	28	19	3	3	9	450	187.50
36	6	61	28	19	3	3	9	500	204.90
44	4	51	30	21	4	4	9	575	222.30
45	5	56	30	21	4	4	9	650	247.50
46	6	61	30	21	4	4	9	725	272.50
54	4	51	35	25	4	4	10	800	295.80
55	5	56	35	25	4	4	10	900	323.40
56	6	61	35	25	4	4	10	975	351.00
57	7	66	35	25	4	4	10	1050	363.00
64	4	54	38	28	5	5	12	1200	383.85
65	5	59	38	28	5	5	12	1350	425.85
66	6	64	38	28	5	5	12	1475	459.45
67	7	70	38	28	5	5	12	1575	491.85
74	4	55½	43	32	6	6	12	1700	525.00
75	5	61	43	32	6	6	12	1875	560.40
76	6	66½	43	32	6	6	12	2025	595.80
77	7	72	43	32	6	6	12	2150	631.20
84	4	55½	50	39	6	6	14	2225	665.70
85	5	61	50	39	6	6	14	2400	705.90
86	6	66½	50	39	6	6	14	2550	746.10
87	7	72	50	39	6	6	14	2675	786.30

Unless otherwise specified, boilers will be shipped with single outlets.

Number of 2-inch outlets which will be furnished, if specified in order, Nos. 33 to 46, 4; Nos. 54 to 77, 6; Nos. 84 to 87, 10.

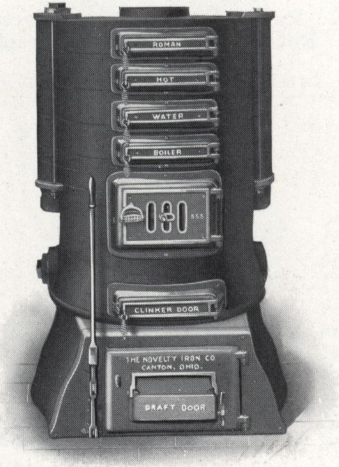
When soft coal is used for fuel, one size larger boiler is required than when hard coal is used.

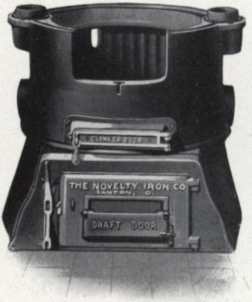
Arranged for pipe coil for heating water for domestic purposes.

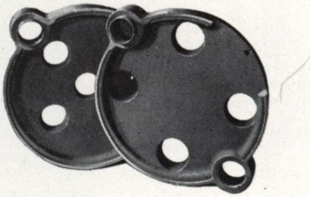
See Note on Page 56

"Roman"

HOT WATER BOILERS







"Roman"

HOT WATER BOILERS

Arched Corrugated Firepot
Concaved Sections
Taper Push Nipples
No Rubber nor Asbestos Packing
Rocking and Dumping Grate

DIMENSIONS AND CAPACITIES

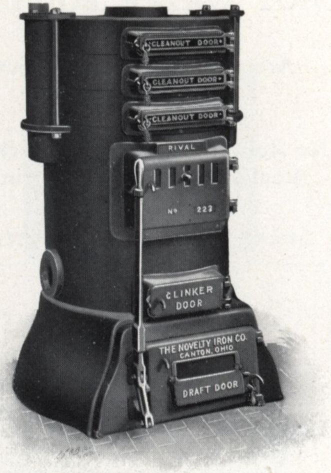
No. of Boiler	No. of Sections	Height to Top of Outlet	Diam. of Boiler	Diam. of Grate	No. and Size Outlets	No. and Size Inlets	Size Smoke Pipe	Rating See Note	Price Complete
533	3	45	30½	19	2—3″	2—3″	9	350	$155.00
534	4	50	30½	19	2—3″	2—3″	9	400	173.00
535	5	55	30½	19	2—3″	2—3″	9	450	191.00
536	6	60	30½	19	2—3″	2—3″	9	500	209.00
544	4	50	35	22	2—4″	2—4″	9	575	222.00
545	5	55	35	22	2—4″	2—4″	9	650	252.00
546	6	60	35	22	2—4″	2—4″	9	725	282.00
554	4	50	38	25	2—4″	2—4″	10	800	300.00
555	5	55	38	25	2—4″	2—4″	10	900	327.00
556	6	60	38	25	2—4″	2—4″	10	975	354.00
557	7	65	38	25	2—4″	2—4″	10	1050	366.00
564	4	53	41	28	2—5″	2—5″	12	1200	387.00
565	5	58	41	28	2—5″	2—5″	12	1350	429.00
566	6	63	41	28	2—5″	2—5″	12	1475	465.00
567	7	69	41	28	2—5″	2—5″	12	1575	495.00
574	4	55	44	32	2—6″	2—6″	12	1700	528.00
575	5	60½	44	32	2—6″	2—6″	12	1875	564.00
576	6	66	44	32	2—6″	2—6″	12	2025	600.00
577	7	71½	44	32	2—6″	2—6″	12	2150	636.00

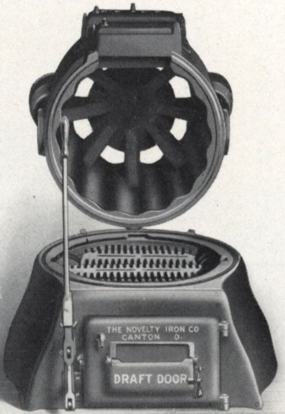
When soft coal is used for fuel, one size larger boiler is required than when hard coal is used.

Arranged for pipe coil for heating water for domestic purposes.

See Note on Page 56

"Rival"
HOT WATER BOILERS





"Rival"

HOT WATER BOILERS

Corrugated Firepot, Extra Deep, Flat Drop Tubes
Narrow Water Ways
Rocking and Dumping Grate
Taper Push Nipple Joints
Adapted to any Kind of Fuel

DIMENSIONS AND CAPACITIES

No. of Boiler	No. of Sections	Height to Top of Outlet	Diam. of Boiler	Diam. of Grate	No. and Size Outlets	No. and Size Inlets	Size Smoke Pipe	Rating See Note	Price Complete
192	2	46	30½	19	2—3″	2—3″	9	450	$153.00
193	3	51	30½	19	2—3″	2—3″	9	550	171.00
194	4	56	30½	19	2—3″	2—3″	9	650	189.00
222	2	48¼	35	22	2—4″	2—4″	9	700	228.00
223	3	53¼	35	22	2—4″	2—4″	9	800	255.00
224	4	58¼	35	22	2—4″	2—4″	9	875	282.00
252	2	50	38	25	2—4″	2—4″	10	975	327.00
253	3	55	38	25	2—4″	2—4″	10	1025	363.00
254	4	60	38	25	2—4″	2—4″	10	1100	393.00
282	2	52¾	41	28	2—5″	2—5″	12	1250	432.00
283	3	58	41	28	2—5″	2—5″	12	1375	465.00
284	4	63¼	41	28	2—5″	2—5″	12	1500	498.00
312	2	53¼	44	31	2—5″	2—5″	12	1650	537.00
313	3	58⅜	44	31	2—5″	2—5″	12	1800	573.00
314	4	63½	44	31	2—5″	2—5″	12	1950	609.00
342	2	54	48½	34	2—6″	2—6″	12	2075	648.00
343	3	59½	48½	34	2—6″	2—6″	12	2250	687.00
344	4	65	48½	34	2—6″	2—6″	12	2400	726.00

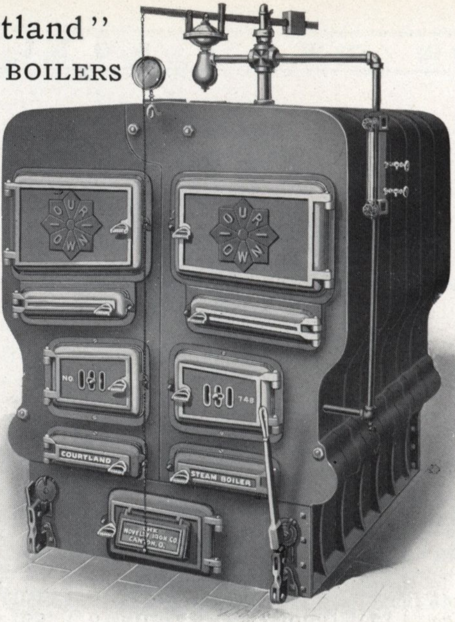
Five section boilers can be furnished if desired.

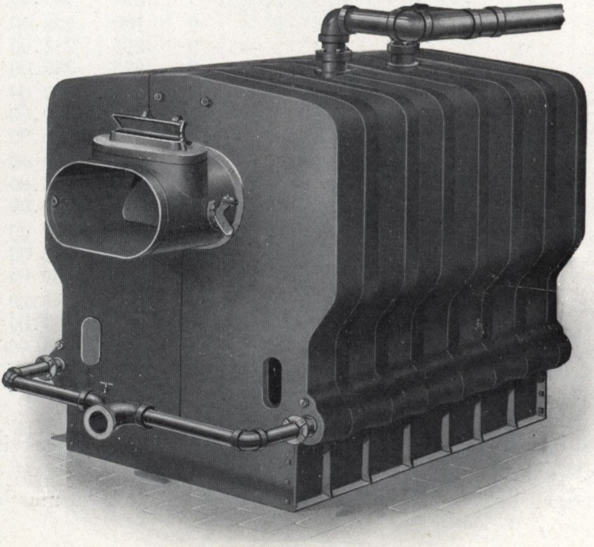
When soft coal is used for fuel, one size larger boiler is required than when hard coal is used.

Arranged for pipe coil for heating water for domestic purposes.

See Note on Page 56

"Courtland"
STEAM BOILERS





"Courtland"

STEAM BOILERS

Heavy Duty Boiler
Large Flue Area
No Drums nor Headers
Taper Push Nipple Joints
Easily Erected

DIMENSIONS AND CAPACITIES

No. of Boiler	†No. of Sections	*Length of Boiler	Size of Grate	No. and Size of Outlets	No. and Size Inlets	Foundation	Rating See Note	Price Complete
548	5	54	48x43	2—6″	2—4″	54x 49	4100	$1560.00
648	6	64½	48x53½	2—6″	2—4″	54x 59½	4700	1698.00
748	7	75	48x64	2—6″	2—4″	54x 70	5600	1948.00
848	8	85½	48x74½	3—6″	2—4″	54x 80½	6500	2198.00
948	9	96	48x85	3—6″	2—4″	54x 91	7400	2448.00
1048	10	106½	48x95½	3—6″	2—4″	54x101½	8300	2698.00

Height to top of outlet, 80 inches.

Total width of boiler, 67 inches.

Height of water line, 68 inches.

Size smoke pipe, 20 inches.

* Add 20 inches to length to allow for smoke-hood.

† Sections are in halves.

Extra tappings can be provided if desired.

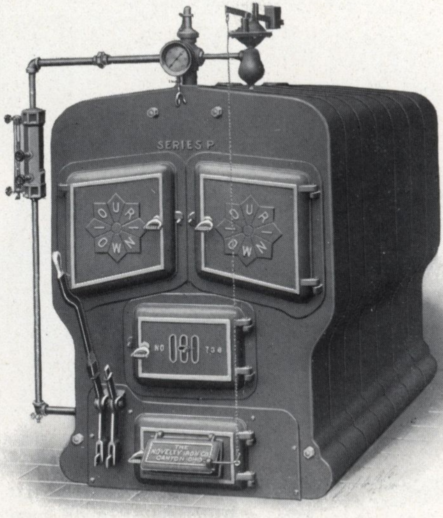
Do not bush flow pipe openings—connect all of them full size to the main.

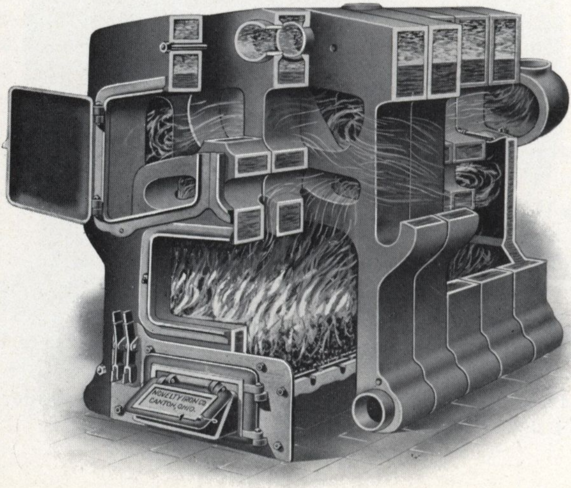
When soft coal is used for fuel, one size larger boiler is required than when hard coal is used.

See Note on Page 56

36 Inch Series "P"

STEAM BOILERS





36 Inch Series "P"

STEAM BOILERS

No Drums nor Headers
Large Water Ways. Large Flues
Taper Push Nipple Joints
Perfect Circulation in the Boiler
Steady Water Line

DIMENSIONS AND CAPACITIES

No. of Boiler	No. of Sections	*Length of Boiler	Size of Grate	No. and Size Outlets	No. and Size Inlets	Founda-tion	Rating See Note	Price Complete
636	6	44	36x36	2—4″	2—4″	50x44	1900	$ 897.00
736	7	51	36x44	2—4″	2—4″	50x51	2250	1017.00
836	8	58	36x51	2—4″	2—4″	50x58	2600	1137.00
936	9	65	36x58	2—4″	2—4″	50x65	2950	1257.00
1036	10	72	36x65	3—4″	2—4″	50x72	3300	1377.00
1136	11	79	36x73	3—4″	2—4″	50x79	3650	1497.00
1236	12	86	36x80	3—4″	2—4″	50x86	4000	1617.00

Height to top of outlet, 70 inches.

Width of boiler, 54 inches.

Height of water line, 58 inches.

Size smoke pipe, 16 inches.

* Add 14 inches to length to allow for smoke-hood.

Rear grates can be removed or bricked off if desired.

Extra tappings can be provided if desired.

Do not bush flow pipe openings—connect all of them full size to the main.

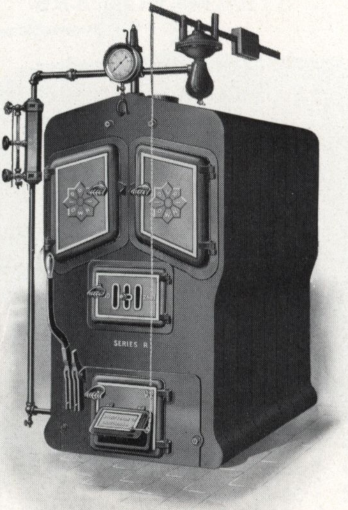
When soft coal is used for fuel, one size larger boiler is required than when hard coal is used.

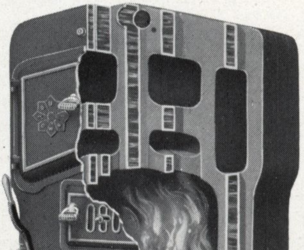
Arranged for pipe coil for heating water for domestic purposes.

See Note on Page 56

24 Inch Series "R"

STEAM BOILERS




THE NOVELTY IRON CO CANTON, OHIO

24 Inch Series "R"

STEAM BOILERS

Vertical Sections
Taper Push Nipple Joints
All Pipes Connected Direct to the Boiler
Large Flues. Easily Cleaned
Perfect Circulation of Water in the Boiler

DIMENSIONS AND CAPACITIES

No. of Boiler	No. of Sections	*Length of Boiler	Size of Grate	No. and Size Outlets	No. and Size Inlets	Foundation	Rating See Note	Price Complete
2450	5	28	24x18	1—4″	1—4″	24x32	675	$371.20
2460	6	34	24x24	1—4″	1—4″	30x32	900	483.30
2470	7	40	24x30	2—4″	1—4″	36x32	1100	567.60
†2480	8	46	24x36	2—4″	1—4″	42x32	1300	651.90
†2490	9	52	24x42	2—4″	1—4″	48x32	1450	728.70
†2500	10	58	24x48	2—4″	1—4″	54x32	1600	775.50

Height to top of outlet, 61 inches.
Width of boiler, 33 inches.
Height of water line, 50 inches.
Size of smoke pipe, 12 inches.
* Add 10 inches to length to allow for smoke-hood.
† These boilers have two shakers.
Extra tappings can be provided if desired.

Do not bush flow pipe openings—connect all of them full size to the main.

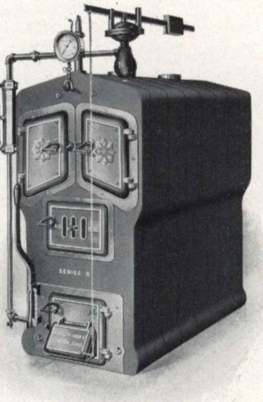
When soft coal is used for fuel, one size larger boiler is required than when hard coal is used.

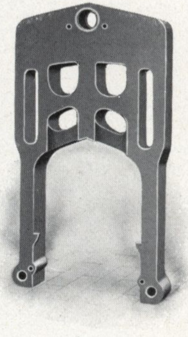
Arranged for pipe coil for heating water for domestic purposes.

See Note on Page 56

18 Inch Series "R"

STEAM BOILERS





18 Inch Series "R"

STEAM BOILERS

Vertical Sections
Taper Push Nipple Joints
All Pipes Connected Direct to the Boiler
Large Flues. Easily Cleaned.
Perfect Circulation of Water in the Boiler

DIMENSIONS AND CAPACITIES

No. of Boiler	No. of Sections	*Length of Boiler	Size of Grate	No. and Size Outlets	No. and Size Inlets	Foundation	Rating See Note	Price Complete
1850	5	28	18x18	1—3″	1—3″	24x25	400	$241.00
1860	6	34	18x24	1—3″	1—3″	30x25	525	306.10
1870	7	40	18x30	2—3″	1—3″	36x25	675	371.20
1880	8	46	18x36	2—3″	1—3″	42x25	825	428.80

Height to top of outlet, 54 inches.
Width of boiler, 28½ inches.
Height of water line, 46 inches.
Size smoke pipe, 9 inches.
* Add 10 inches to length to allow for smoke-hood.
Extra tappings can be provided if desired.

Do not bush flow pipe outlets—connect all of them full size to the main.

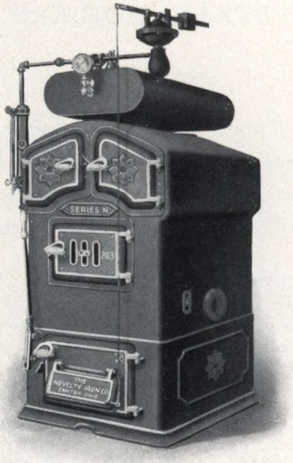
When soft coal is used for fuel, one size larger boiler is required than when hard coal is used.

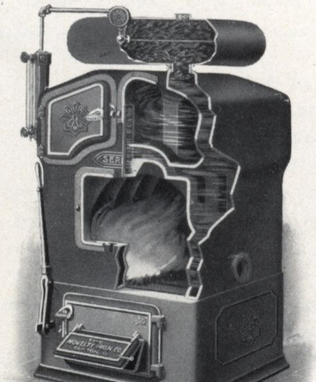
Arranged for pipe coil for heating water for domestic purposes.

See Note on Page 56

Series "N"

STEAM BOILERS


SERIES N
203
THE NOVELTY IRON CO. CANTON, OHIO



Series "N"

STEAM BOILERS

Corrugated Firepot
Return Flues
Extended Heating Surface
Rocking and Dumping Grate
Only One Joint, Screw Nipple

DIMENSIONS AND CAPACITIES

No. of Boiler	Height of Boiler	Height of Water Line	Width of Boiler	*Length of Boiler	Size of Grate	Size Outlet	Size Inlet	Size Smoke Pipe	Rating See Note	Price Complete
201	56	44	24	22	16x12	2	1½	7	175	$168.00
202	56	44	24	28	16x18	2½	2	7	250	195.00
203	56	44	24	34	16x24	2½	2	7	375	243.00
204	60	47	30	34	20x24	3	2½	9	475	293.40

* Add 10 inches to length of Nos. 201, 202 and 203 to allow for smoke-hood.

* Add 11½ inches to length of No. 204 to allow for smoke-hood.

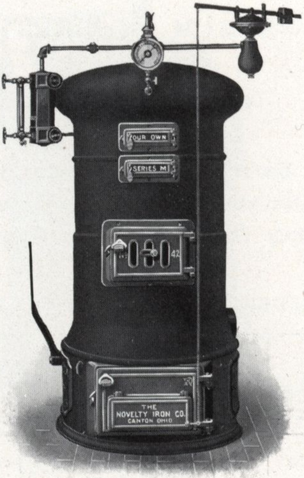
When soft coal is used for fuel, one size larger boiler is required than when hard coal is used.

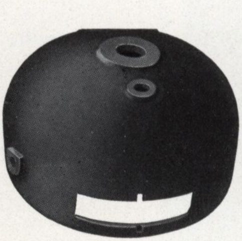
Arranged for pipe coil for heating water for domestic purposes.

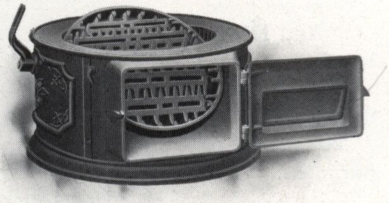
See Note on Page 56

Series "M"

STEAM BOILERS







Series "M"

STEAM BOILERS

Self Cleaning Heating Surface
Corrugated Firepot
Narrow Water Ways
Vertical Circulation
Rocking and Dumping Grate

DIMENSIONS AND CAPACITIES

No. of Boiler	Height to Top of Outlet	Height of Water Line	Diam. of Boiler	Diam. of Grate	Size Outlets	Size Inlets	Size Smoke Pipe	Rating See Note	Price Complete
*17	53	47	20	15	1½	1¼	6	175	$131.70
*22	60	54	24	17	2	1½	7	225	158.10
*32	66	59	28	19	2½	2	8	300	204.00
42	66	58	30	21	2½	2	9	400	258.00

* Have steam dome as shown at bottom of page 36.

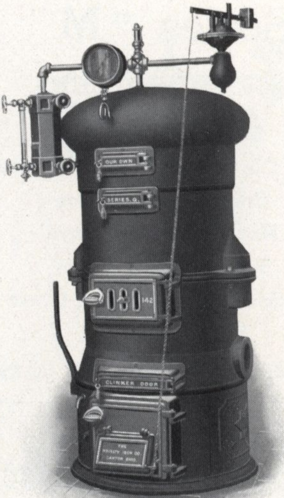
When soft coal is used for fuel, one size larger boiler is required than when hard coal is used.

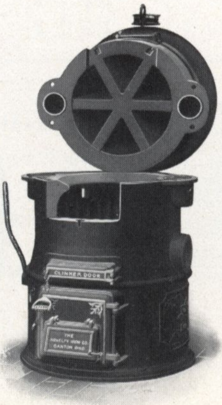
Arranged for pipe coil for heating water for domestic purposes.

See Note on Page 56

Series "Q"

STEAM BOILERS





Series "Q"

STEAM BOILERS

Arched Corrugated Firepot
Self Cleaning Heating Surface
Large Flues
Taper Push Nipple Joints
Rocking and Dumping Grate
Burns Any Kind of Fuel

DIMENSIONS AND CAPACITIES

No. of Boiler	Height to Top of Outlet	Height of Water Line	Diam. of Boiler	Diam. of Grate	Size Outlets	Size Inlets	Size Smoke Pipe	Rating See Note	Price Complete
*132	62	55	28	19	2½	2	8	300	$183.30
142	62	54	30	21	2½	2	9	400	232.50
152	62	54	35	25	3	2½	10	525	291.90
162	62	54	38	28	3	2½	11	675	347.10

* Has steam dome as shown at bottom of page 36.

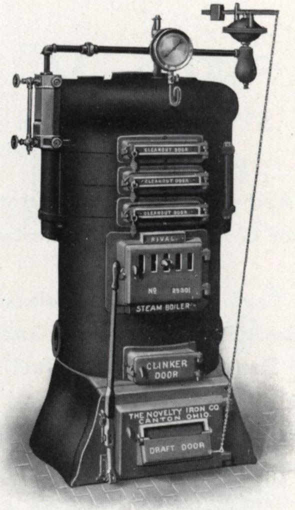
When soft coal is used for fuel, one size larger boiler is required than when hard coal is used.

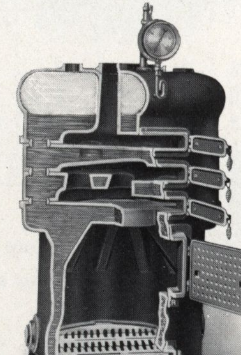
Arranged for pipe coil for heating water for domestic purposes.

See Note on Page 56

"Rival"

STEAM BOILERS





"Rival"

STEAM BOILERS

Corrugated Firepot, Extra Deep. Flat Drop Tubes
Narrow Water Ways
Rocking and Dumping Grate
Taper Push Nipple Joints
Adapted to Any Kind of Fuel

DIMENSIONS AND CAPACITIES

No. of Boiler	No. of Sections	Height to Top of Outlet	Height of Water Line	Diam. of Boiler	Diam. of Grate	Size Outlets	Size Inlets	Size Smoke Pipe	Rating See Note	Price Complete
1920	2	51½	44½	30½	19	3	2	9	275	$193.00
1930	3	56½	49½	30½	19	3	2	9	350	211.00
1940	4	61½	54½	30½	19	3	2	9	400	229.00
2220	2	55	47	35	22	3	2	9	425	246.00
2230	3	60	52	35	22	3	2	9	475	273.00
2240	4	65	57	35	22	3	2	9	525	300.00
2520	2	58	50	38	25	4	2½	10	575	345.00
2530	3	63	55	38	25	4	2½	10	650	381.00
2540	4	68	60	38	25	4	2½	10	725	411.00
2820	2	60½	51½	41	28	4	3	12	750	453.00
2830	3	65¾	56¾	41	28	4	3	12	875	486.00
2840	4	71	62	41	28	4	3	12	1000	519.00
3120	2	61¼	53¼	44	31	4	3	12	1100	561.00
3130	3	66⅜	58⅜	44	31	4	3	12	1250	597.00
3140	4	71½	63½	44	31	4	3	12	1400	636.00
3420	2	62	54	48½	34	4	3½	12	1500	675.00
3430	3	67½	59½	48½	34	4	3½	12	1675	714.00
3440	4	73	65	48½	34	4	3½	12	1850	753.00

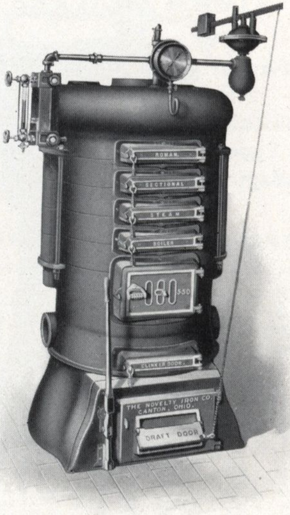
When soft coal is used for fuel, one size larger boiler is required than when hard coal is used.

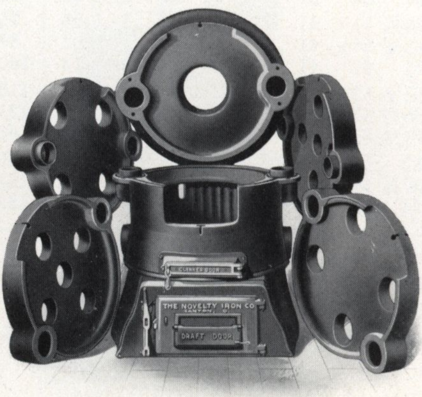
Arranged for pipe coil for heating water for domestic purposes.

See Note on Page 56

"Roman"

STEAM BOILERS





"Roman"

STEAM BOILERS

Arched Corrugated Firepot
Concaved Sections
Taper Push Nipple Joints
No Rubber Nor Asbestos Packing
Rocking and Dumping Grate

DIMENSIONS AND CAPACITIES

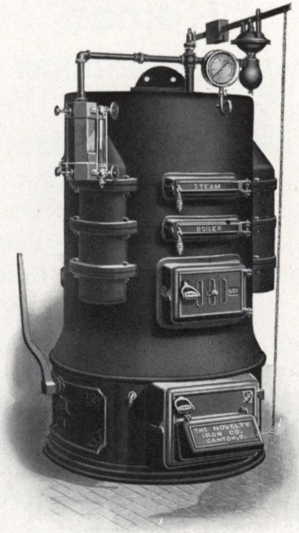
No. of Boiler	No. of Sections	Height to Top of Outlet	Height of Water Line	Diam. of Boiler	Diam. of Grate	Size Outlets	Size Inlets	Size Smoke Pipe	Rating See Note	Price Complete
330	3	50	43	30½	19	3	2	9	225	$194.00
340	4	55	48	30½	19	3	2	9	275	212.00
350	5	60	53	30½	19	3	2	9	300	230.00
430	3	53	45	35	22	3	2	9	350	243.00
440	4	58	50	35	22	3	2	9	400	264.00
450	5	63	55	35	22	3	2	9	450	285.00
530	3	54	46	38	25	4	2½	10	525	309.00
540	4	59	51	38	25	4	2½	10	600	345.00
550	5	64	56	38	25	4	2½	10	675	381.00
630	3	57	49	41	28	4	3	12	775	408.00
640	4	62¼	54¼	41	28	4	3	12	875	480.00
650	5	67½	59½	41	28	4	3	12	975	528.00
740	4	62½	54½	44	32	4	3	12	1100	576.00
750	5	68	60	44	32	4	3	12	1225	636.00
760	6	73½	65½	44	32	4	3	12	1350	696.00

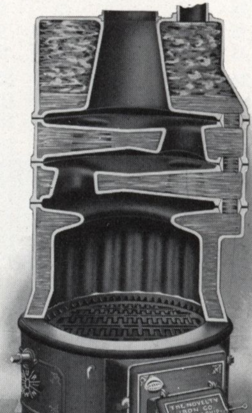
When soft coal is used for fuel, one size larger boiler is required than when hard coal is used.

Arranged for pipe coil for heating water for domestic purposes.

See Note on Page 56

"Hesper"
STEAM BOILERS


STEAM
BOILER
601
THE NOVELTY IRON CO. CANTON, O.



"Hesper"

STEAM BOILERS

Arched Corrugated Firepot
Taper Push Nipple Joints
Perfect Circulation in the Boiler
Steady Water Line
Large Steam Space

DIMENSIONS AND CAPACITIES

No. of Boiler	No. of Sections	Height to Top of Outlet	Height of Water Line	Diam. of Boiler	Diam. of Grate	No. and Size Outlets	Size Inlets	Size Smoke Pipe	Rating See Note	Price Complete
300	2	54	43	31½	19	2—2″	2	8	225	$165.00
301	3	60	49	31½	19	2—2″	2	8	275	177.00
400	2	54	43	33½	21	2—2½″	2½	9	300	201.00
401	3	61	50	33½	21	2—2½″	2½	9	350	225.00
402	4	68	57	33½	21	2—2½″	2½	9	400	249.00
500	2	54	43	37½	25	2—3″	3	10	450	279.00
501	3	61	50	37½	25	2—3″	3	10	525	294.00
502	4	68	57	37½	25	2—3″	3	10	600	330.00
600	2	55	44	40½	28	2—3″	3	11	700	402.00
601	3	61	50	40½	28	2—3″	3	11	825	450.00
602	4	69	58	40½	28	2—3″	3	11	950	504.00
701	3	61	50	45½	32	2—3½″	3½	12	1050	564.00
702	4	69	58	45½	32	2—3½″	3½	12	1200	642.00
703	5	76	65	45½	32	2—3½″	3½	12	1400	702.00
801	3	64	52	52½	39	2—4″	4	14	1600	771.00
802	4	71	59	52½	39	2—4″	4	14	1850	873.00
803	5	79	67	52½	39	2—4″	4	14	2250	975.00

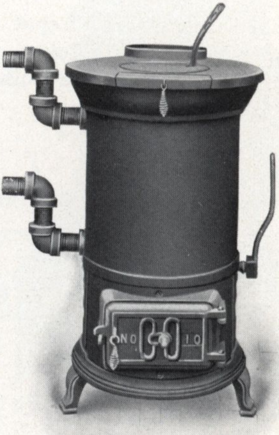
When soft coal is used for fuel, one size larger boiler is required than when hard coal is used.

Arranged for pipe coil for heating water for domestic purposes.

See Note on Page 56

Series "A"

TANK HEATERS



No. 10

DIMENSIONS AND CAPACITIES

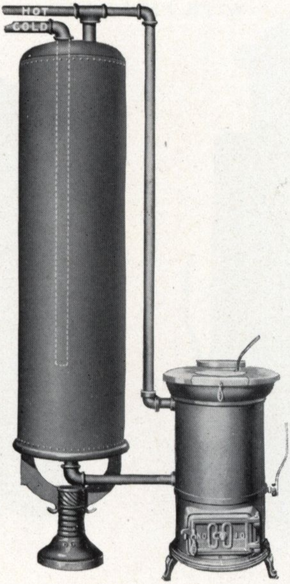
No.	Height Inches	Diam. Heater Inches	Diam. Grate Inches	Size Outlets	Size Smoke Pipe Inches	Tank Capacity Gallons	Price Complete
9	26	18	10	1¼	6	80	$33.60
10	32	18	10	1¼	6	100	36.60
12	32	18	12	1½	6	150	44.25
14	36	23	14	2	6	250	54.30

When soft coal is used for fuel, a size larger heater is required than when hard coal is used.

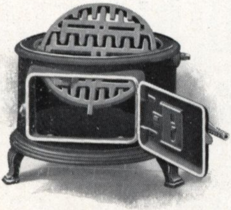
See Note on Page 56

No. 10 Series "A"

TANK HEATER



Connected to Range Boiler.

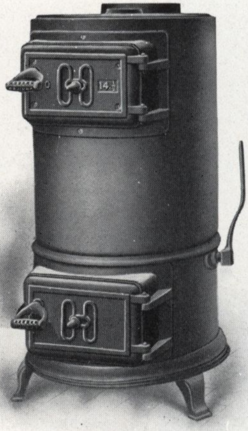


Ashpit of Series "A"

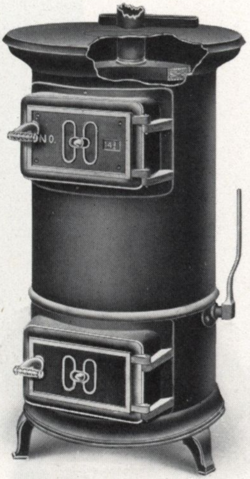
Series "A"

TANK HEATERS

WITH FIRE DOOR



No. 14½



No. 14¾

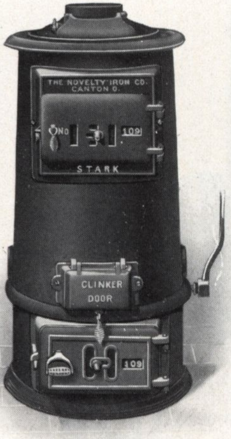
DIMENSIONS AND CAPACITIES

No.	Height Inches	Diam. Heater Inches	Diam. Grate Inches	Size Outlets	Size Smoke Pipe Inches	Tank Capacity Gallons	Price Complete
14½	36	23	14	2	6	300	$62.70
14¾	39	23	14	2	6	325	70.80

When soft coal is used for fuel, one size larger heater is required than when hard coal is used.

See Note on Page 56

STARK TANK HEATERS



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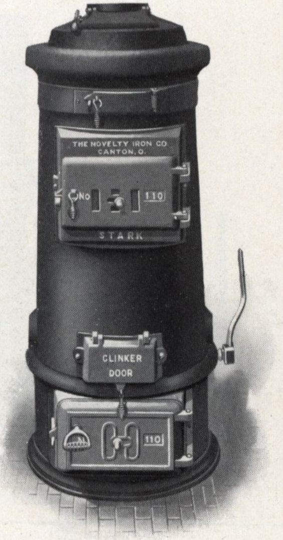


No. 110

DIMENSIONS AND CAPACITIES

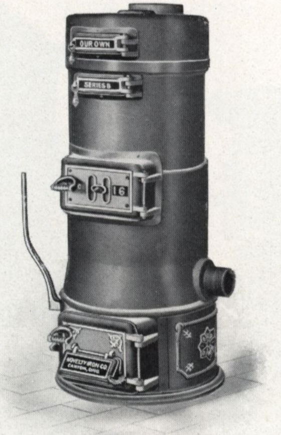
No.	Height Inches	Diam. Heater Inches	Diam. Grate Inches	No. and Size Outlets	Size Smoke Pipe Inches	Tank Capacity Gallons	Price Complete
107	32½	16	10	1—1½	5	100	$48.45
*108	37	16	10	1—1½	5	150	60.00
109	41	20	12	3—1½	6	225	78.00
*110	46	20	12	3—1½	6	300	96.00

* These heaters have additional section as shown on cut to the right.

See Note on Page 56

Series "B"

FOR TANK HEATING PURPOSES



DIMENSIONS AND CAPACITIES

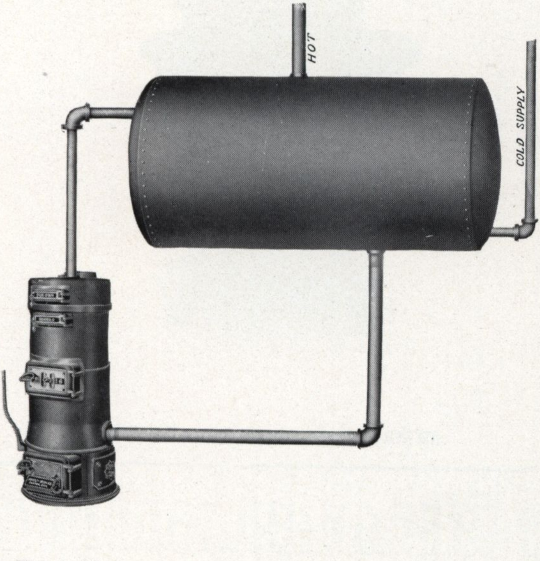
No.	Height Inches	Diam. Boiler Inches	Diam. Grate Inches	Size Smoke Pipe Inches	Size Outlets	Capacity Gallons per hour	Price Complete
*15	46	20	15	6	3	325	$109.80
16	50	20	15	6	3	400	122.10
*20	50	24	17	7	3	450	137.40
21	54	24	17	7	3	525	152.70
*30	53	28	19	8	3	600	180.00
31	57	28	19	8	3	650	196.50
*40	53	30	21	9	4	750	216.00
41	57	30	21	9	4	850	241.50

* This boiler does not have top section.

When soft coal is used for fuel, one size larger boiler is required than when hard coal is used.

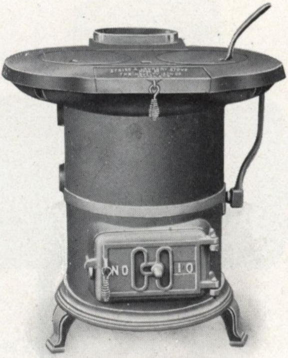
See Note on Page 56

Series "B"



As Tank Heater connected to large Horizontal Tank for Storage of Hot Water.

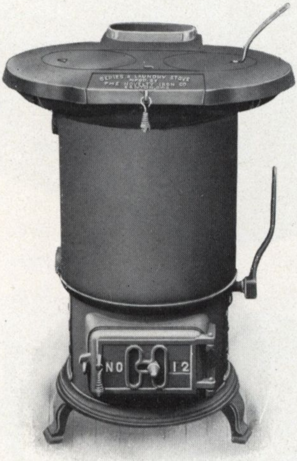
CHICAGO LAUNDRY STOVES



DIMENSIONS AND CAPACITIES

No.	Height Inches	Size Top Inches	Diam. Base Inches	Diam. Grate Inches	Size Outlet	Size Smoke Pipe Inches	Tank Capacity Gallons	Price Complete
10	26	18x24½	18	10	1¼	6	80	$38.70

SPECIAL LAUNDRY STOVES



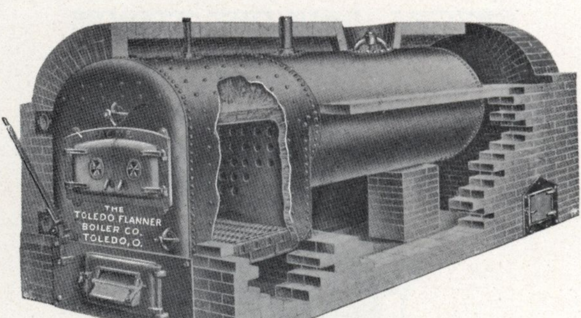
DIMENSIONS AND CAPACITIES

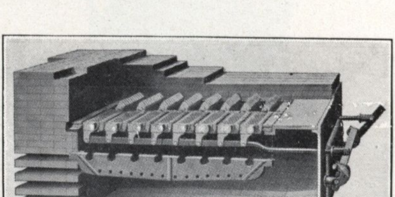
No.	Height Inches	Size Top Inches	Diam. Base Inches	Diam. Grate Inches	Size Outlet	Size Smoke Pipe Inches	Tank Capacity Gallons	Price Complete
10	32	18x24½	18	10	1¼	6	100	$38.70
12	32	18x24½	18	12	1½	6	150	46 35

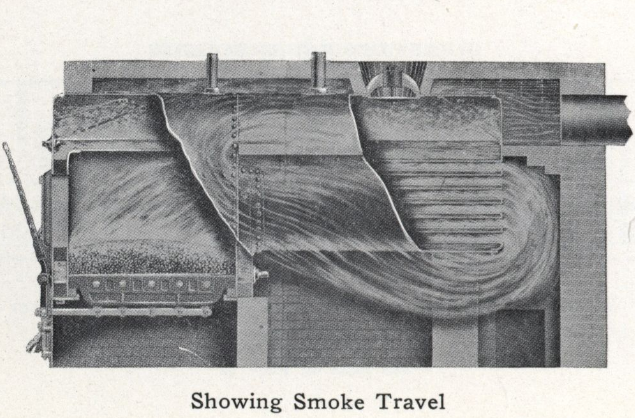
When soft coal is used for fuel, one size larger heater is required than when hard coal is used.

See Note on Page 56

FLANNER SAFETY FIRE BOX BOILERS







Showing Smoke Travel

Price List of Flanner Safety Fire Box Boilers

For Brick Setting. Without Domes.
Manholes in all Boilers over 30 inches Diameter

Number	Diameter of Shell, Inches	Length over all, Feet	Length of Fire Box, Inches	Width of Fire Box, Inches	Fire Doors, *Single Inches	Fire Doors, Double Inches	Approximate Weight of Boiler complete with Castings—lbs.	Steam Tapping, Steam Outlet	Steam Tapping, Return Outlet	Water Tapping—Flow and Return, 2 each	Size of Smoke-Pipe, Inches	Rating Steam, Square Feet	Rating Water Square Feet	Price Steam Boiler Complete with Castings—no trimmings	Steam Trimmings, extra	Price Water Boiler with castings—no trimmings
1	30	6½	26	24	12x18	....	2450	3	2½	4	16	900	1400	$ 285.00	$18.00	$ 295.00
2	30	7½	32	24	12x18	......	2750	3	2½	4	16	1000	1600	300.00	18.00	310.00
3	30	8½	38	24	12x18	....	3150	4	3	4	16	1200	1900	320.00	19.00	330.00
4	36	7½	32	30	....	16x22	3600	4	3	5	18	1400	2200	375.00	19.00	390.00
5	36	9	38	30	.....	16x22	3925	4	3	5	18	1700	2700	400.00	19.00	415.00
6	36	10½	44	30	......	16x22	4350	4	3	5	18	2100	3400	435.00	19.00	450.00
7	42	8½	38	36	....	16x24	4625	6	4	5	20	2200	3500	460.00	23 00	475.00
8	42	10	44	36	.....	16x24	5250	6	4	6	20	2500	4000	510.00	23.00	525.00
9	42	11½	50	36	....	16x24	5800	6	4	6	20	2900	4600	560.00	23.00	575.00
10	48	10½	44	42	....	18x30	7200	6	4	6	22	3200	5100	630.00	23.00	645.00
11	48	12	50	42	.....	18x30	7625	6	4	6	22	3800	6100	680.00	23.00	695.00
12	48	13½	56	42	.. .	18x30	8175	7	5	7	22	4400	7000	735.00	28.00	755.00
13	54	14	56	48	.....	18x30	9650	7	5	7	24	4900	7800	860.00	28.00	880.00
14	54	16½	62	48	....	18x30	10550	7	5	7	24	5800	9300	935.00	28.00	955.00
15	60	15½	62	54	18x24	.....	13600	7	5	7	30	7200	11500	1200.00	40.00	1225.00
16	60	18	68	54	18x24	.....	15000	7	5	8	30	8500	13600	1310.00	40.00	1335.00
17	66	16	62	60	18x24	......	16300	8	6	8	34	9300	14800	1500.00	40.00	1530.00
18	66	18	68	60	18x24	....	17800	8	6	10	34	10500	16800	1600.00	40.00	1630.00
19	72	16	68	66	18x24	.....	19700	8	6	10	40	11200	17900	1800.00	44.00	1840.00
20	72	18	74	66	18x24	.....	21200	8	6	10	40	12800	20500	2000.00	44.00	2040.00

TRIMMINGS—as listed, include: one Steam Gauge, one Water Column with three Gauge Cocks and Water Gauge; one Pop Safety Valve; one Automatic Draft Regulator. One Hoe and Poker furnished with each boiler.

Every boiler fitted with a safety Fusible Plug in Crown Sheet. Ash Pit Front provided with Special Lift Door for Automatic Regulator.

Castings consist of Ash Pit Front, Fire Door and Frame, one large and four small Soot Doors and Frames and Flanner Shaking Grates.

No extra charge made for hoe and poker shipped with boiler. Tubes inserted in fire box for domestic coil will be charged extra. ($2.00 net.)

*Boilers Nos. 15 to 20 have two single fire doors. Extra charge is made for furnishing coil openings in fire box,

NOTE

Our ratings provide that all piping, mains, risers, flow and returns shall be figured as radiating surface in addition to the direct radiation used when estimating size of boiler required.

These ratings are based on standard two pounds pressure at the boiler for steam, and a temperature of 180 degrees water at the boiler for hot water.

When indirect radiation is to be used a boiler of not less than 75 per cent additional capacity should be selected than is required for direct radiation.

When a pipe coil or cast iron section is introduced in the firepot of a heater, or a steam coil placed in a tank for the purpose of heating water for domestic use, additional capacity should be provided for, in estimating size of boiler required, at the rate of 1¼ square feet of direct radiation where steam is used, and 2 square feet of direct radiation for hot water, for each gallon to be thus heated per hour.

In estimating capacity of boiler required, the number of square feet of radiation in the mains should be figured one-half more if they are to be left uncovered.

We advise that all steam boilers and mains should be properly covered with a good non-conducting material.

When soft coal is used for fuel, one size larger boiler is required than when hard coal is to be used.

Our boilers are conservatively rated and are guaranteed only to the extent of furnishing new castings for any found defective in manufacture.

We do not assume any responsibility for the manner in which they are installed.

BRANCH HEADERS AND "Y" FITTINGS

All Hot Water Boilers are shipped with single outlets unless otherwise ordered.

SHIPMENTS

We do not replace material broken or damaged in transit.

All goods are delivered to the transportation company in good order and condition, and upon obtaining their receipt for same, our responsibility ends, the ownership passing to the consignee. All claims for damages in transit must, therefore, be made upon the transportation company by the consignee.

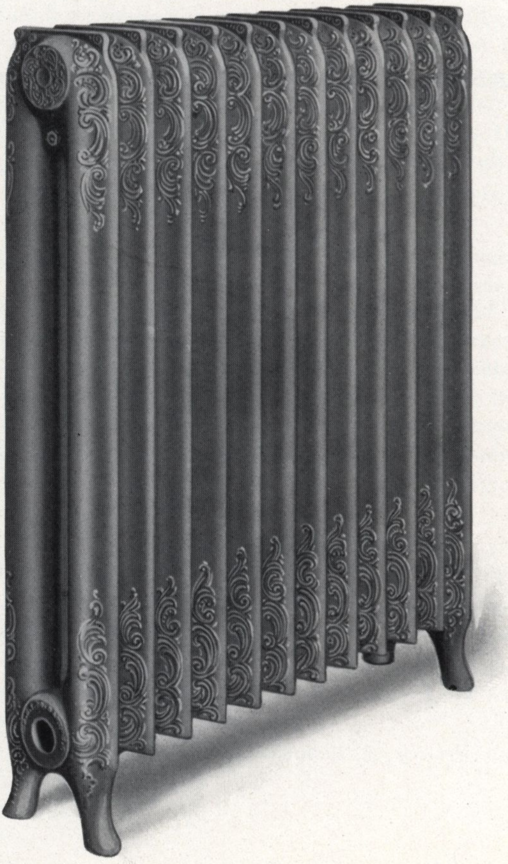
CANCELLATION

Our consent must first be obtained before the cancellation or countermanding of orders will be accepted.

"Emerald"

TWO COLUMN ORNAMENTAL RADIATOR

For Steam and Water



List of Sizes of "Emerald" Two Column Ornamental Steam and Hot Water Radiators

No. of Sections	Length	44 Inches High Sq. ft.	38 Inches High Sq. ft.	32 Inches High Sq. ft.	26 Inches High Sq. ft.	20 Inches High Sq. ft.
2	5	10	8	6⅔	5⅓	4
3	7½	15	12	10	8	6
4	10	20	16	13⅓	10⅔	8
5	12½	25	20	16⅔	13⅓	10
6	15	30	24	20	16	12
7	17½	35	28	23⅓	18⅔	14
8	20	40	32	26⅔	21⅓	16
9	22½	45	36	30	24	18
10	25	50	40	33⅓	26⅔	20
11	27½	55	44	36⅔	29⅓	22
12	30	60	48	40	32	24
13	32½	65	52	43⅓	34⅔	26
14	35	70	56	46⅔	37⅓	28
15	37½	75	60	50	40	30
16	40	80	64	53⅓	42⅔	32
17	42½	85	68	56⅔	45⅓	34
18	45	90	72	60	48	36
19	47½	95	76	63⅓	50⅔	38
20	50	100	80	66⅔	53⅓	40
21	52½	105	84	70	56	42
22	55	110	88	73⅓	58⅔	44
23	57½	115	92	76⅔	61⅓	46
24	60	120	96	80	64	48
25	62½	125	100	83⅓	66⅔	50
26	65	130	104	86⅔	69⅓	52
27	67½	135	108	90	72	54
28	70	140	112	93⅓	74⅔	56
29	72½	145	116	96⅔	77⅓	58
30	75	150	120	100	80	60
31	77½	155	124	103⅓	82⅔	62
32	80	160	128	106⅔	85⅓	64
Price per ft.		41 cents	42 cents	46 cents	50 cents	57 cents

TAPPINGS

ONE-PIPE STEAM

25 square feet and under	1 inch
Above 25, but not exceeding 60 square feet	1¼ inch
Above 60, but not exceeding 100 square feet	1½ inch
Above 100 square feet	2 inch

TWO-PIPE STEAM

50 square feet and under	1 x ¾ inch
Above 50, but not exceeding 95 square feet	1¼ x 1 inch
Above 95 square feet	1½ x 1¼ inch

WATER

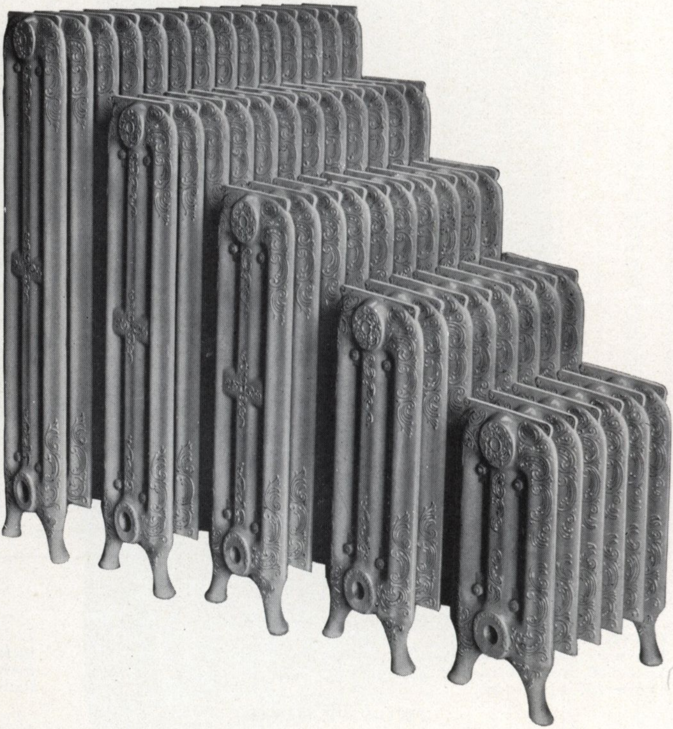
50 square feet and under	1 x 1 inch
Above 50, but not exceeding 75 square feet	1¼ x 1¼ inch
Above 75 square feet	1½ x 1½ inch

Each section is 7¼ inches wide over all.
Height from center of opening to floor is 5 inches.

"Emerald"

THREE COLUMN ORNAMENTAL RADIATORS

For Steam and Water



List of Sizes of "Emerald" Three Column Ornamental Steam and Hot Water Radiators

No. of Sections	Length	44 Inches High Sq. ft.	38 Inches High Sq. ft.	32 Inches High Sq. ft.	26 Inches High Sq. ft.	20 Inches High Sq. ft.
2	5	12	10	9	7½	5½
3	7½	18	15	13½	11¼	8¼
4	10	24	20	18	15	11
5	12½	30	25	22½	18¾	13¾
6	15	36	30	27	22½	16½
7	17½	42	35	31½	26¼	19¼
8	20	48	40	36	30	22
9	22½	54	45	40½	33¾	24¾
10	25	60	50	45	37½	27½
11	27½	66	55	49½	41¼	30¼
12	30	72	60	54	45	33
13	32½	78	65	58½	48¾	35¾
14	35	84	70	63	52½	38½
15	37½	90	75	67½	56¼	41¼
16	40	96	80	72	60	44
17	42½	102	85	76½	63¾	46¾
18	45	108	90	81	67½	49½
19	47½	114	95	85½	71¼	52¼
20	50	120	100	90	75	55
21	52½	126	105	94½	78¾	57¾
22	55	132	110	99	82½	60½
23	57½	138	115	103½	86¼	63¼
24	60	144	120	108	90	66
25	62½	150	125	112½	93¾	68¾
26	65	156	130	117	97½	71½
27	67½	162	135	121½	101¼	74¼
28	70	168	140	126	105	77
29	72½	174	145	130½	108¾	79¾
30	75	180	150	135	112½	82½
31	77½	186	155	139½	116¼	85¼
32	80	192	160	144	120	88
Price per ft.		41 cents	42 cents	46 cents	50 cents	57 cents

TAPPINGS

ONE-PIPE STEAM

25 square feet and under	1	inch
Above 25, but not exceeding 60 square feet	1¼	inch
Above 60, but not exceeding 100 square feet	1½	inch
Above 100 square feet	2	inch

TWO-PIPE STEAM

50 square feet and under	1 x ¾	inch
Above 50, but not exceeding 95 square feet	1¼ x 1	inch
Above 95 square feet	1½ x 1¼	inch

WATER

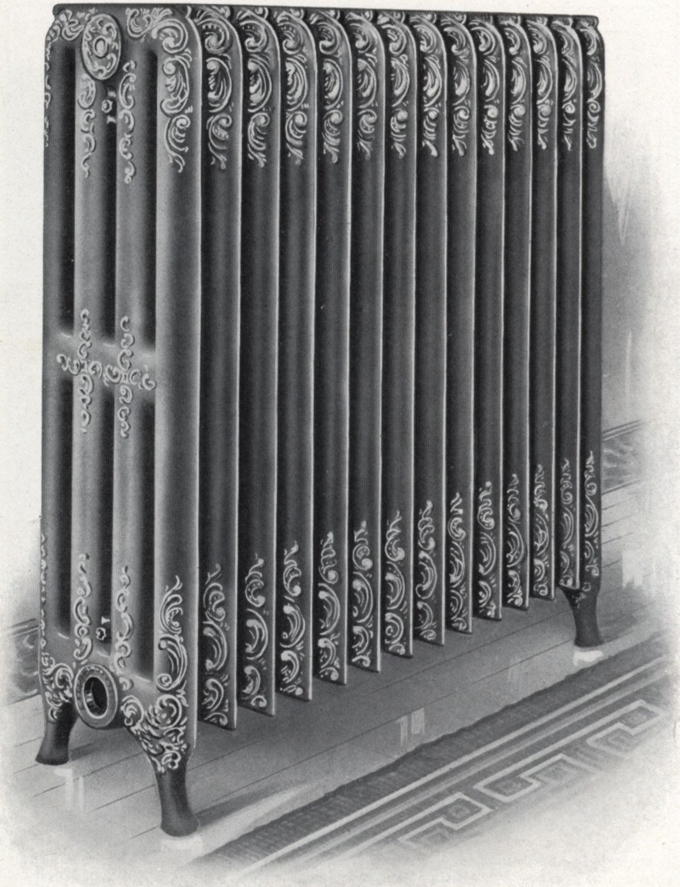
50 square feet and under	1 x 1	inch
Above 50, but not exceeding 75 square feet	1¼ x 1¼	inch
Above 75 square feet	1½ x 1½	inch

Each section is 9¼ inches wide over all.
Height from center of opening to floor is 5 inches.

"Emerald"

FOUR COLUMN ORNAMENTAL RADIATOR

For Steam and Water



List of Sizes of "Emerald" Four Column Ornamental Steam and Hot Water Radiators

No. of Sections	Length	44 Inches High Sq. ft.	38 Inches High Sq. ft.	32 Inches High Sq. ft.	26 Inches High Sq. ft.	20 Inches High Sq. ft.	16 & 14 Inches High Sq. ft.
2	5	18	16	13⅓	10⅔	8	7
3	7½	27	24	20	16	12	10½
4	10	36	32	26⅔	21⅓	16	14
5	12½	45	40	33⅓	26⅔	20	17½
6	15	54	48	40	32	24	21
7	17½	63	56	46⅔	37⅓	28	24½
8	20	72	64	53⅓	42⅔	32	28
9	22½	81	72	60	48	36	31½
10	25	90	80	66⅔	53⅓	40	35
11	27½	99	88	73⅓	58⅔	44	38½
12	30	108	96	80	64	48	42
13	32½	117	104	86⅔	69⅓	52	45½
14	35	126	112	93⅓	74⅔	56	49
15	37½	135	120	100	80	60	52½
16	40	144	128	106⅔	85⅓	64	56
17	42½	153	136	113⅓	90⅔	68	59½
18	45	162	144	120	96	72	63
19	47½	171	152	126⅔	101⅓	76	66½
20	50	180	160	133⅓	106⅔	80	70
21	52½	189	168	140	112	84	73½
22	55	198	176	146⅔	117⅓	88	77
23	57½	207	184	153⅓	122⅔	92	80½
24	60	216	192	160	128	96	84
25	62½	225	200	166⅔	133⅓	100	87½
Price per ft.		41 cts.	42 cts.	46 cts.	50 cts.	57 cts.	60 cts.

TAPPINGS

ONE-PIPE STEAM

25 square feet and under	1 inch
Above 25, but not exceeding 60 square feet	1¼ inch
Above 60, but not exceeding 100 square feet	1½ inch
Above 100 square feet	2 inch

TWO-PIPE STEAM

50 square feet and under	1 x ¾ inch
Above 50, but not exceeding 95 square feet	1¼ x 1 inch
Above 95 square feet	1½ x 1¼ inch

WATER

50 square feet and under	1 x 1 inch
Above 50, but not exceeding 75 square feet	1¼ x 1¼ inch
Above 75 square feet	1½ x 1½ inch

Each section is 11½ inches wide over all.

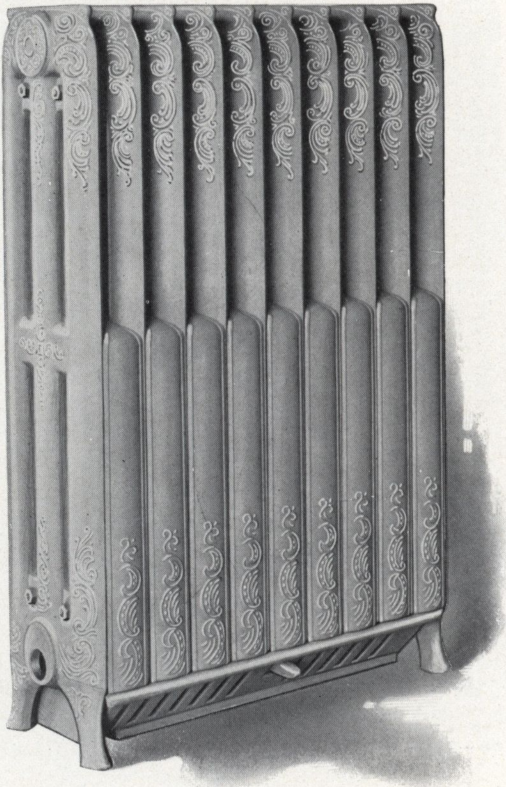
Height from center of opening to floor is 5 inches.

Fourteen inch radiators are 3 inches from center of opening to the floor.

"Emerald"

DIRECT-INDIRECT RADIATOR

For Steam and Water

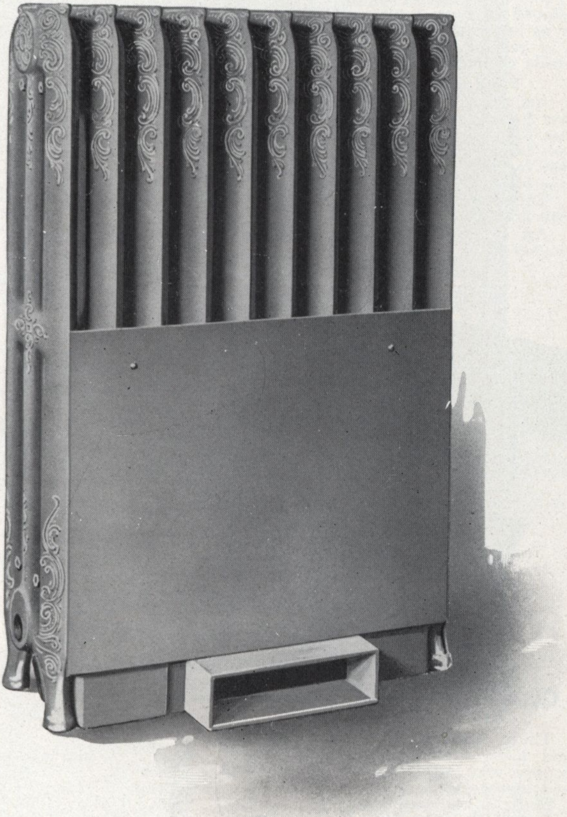


Note how detachable iron slats fit snugly to the radiator and box base.

"Emerald"

DIRECT-INDIRECT RADIATOR

For Steam and Water



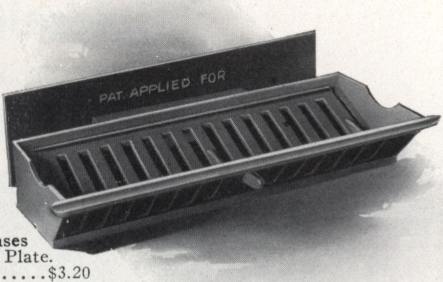
Rear View.

Showing Patent Adjustable Wall Connection

BOX BASES

In the construction of the dampers in our Box Bases, there are no bolts nor joints to become detached or get out of order and the slightest pressure or foot movement will open or close the dampers.

These Box Bases were designed in such a manner as to permit of taking all or part of air from either outside or inside of the room.



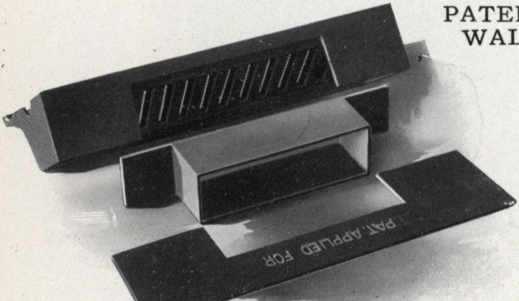
Price List of Box Bases
including Slats and Rear Plate.

Base for 8 Section Radiator	$3.20
Base for 9 Section Radiator	3.60
Base for 10 Section Radiator	4.00
Base for 11 Section Radiator	4.40
Base for 12 Section Radiator	4.80

The largest Base is made for a 12 Section Radiator, but may be used with larger radiators having an even number of sections.

An 11 Section Base may be used with larger radiators having an odd number of sections.

PATENT ADJUSTABLE WALL CONNECTION



Realizing the annoyance to the fitter by not being able to rough in direct-indirect work previous to setting wall connections, we designed a connection which will eliminate this annoyance and allow the fitter to rough in this class of work at his pleasure.

Price with Base Board Attachment, $1.50.

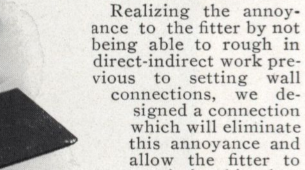
COLD AIR WALL BOXES

These Wall Boxes are of cast iron and have angle slats, and the inside copper wire screen render them storm and insect proof.

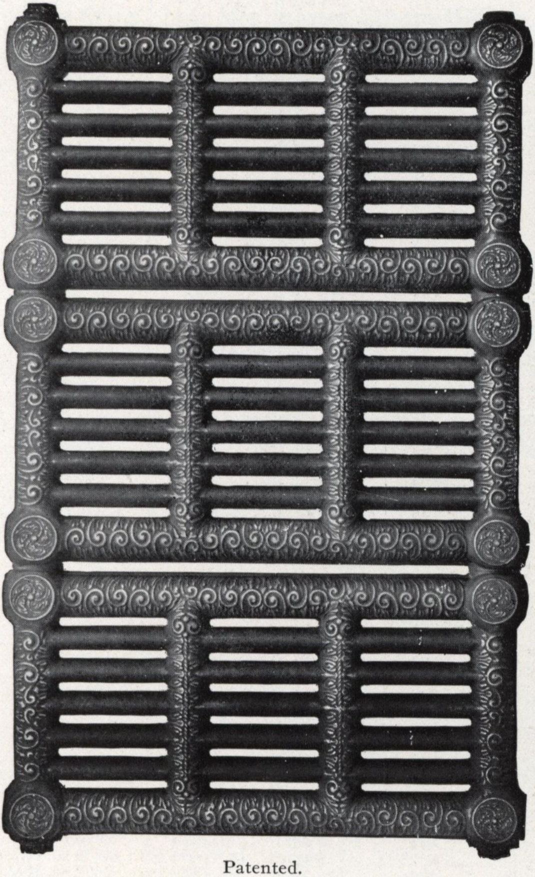
Made in one size only.

Outside measurement, 5 x 17½ inches.

Price, $2.80.



CAST IRON WALL RADIATORS
For Steam or Hot Water



Patented.

VERTICAL INVERTED FORM.

	Inches Long	Inches Wide	Contains Square Feet of Surface
Standard Size	24	12½	7
Medium Size	21	12½	6
Short Size.............	17	12½	5
Special Size..	24	13	9

GRADUATED RATINGS

HOT WATER BOILERS

Rating	Boiler Number
250 sq. ft.	15
300 sq. ft.	16
300 sq. ft.	101
350 sq. ft.	533
350 sq. ft.	33
350 sq. ft.	20
400 sq. ft.	21
400 sq. ft.	102
400 sq. ft.	34
400 sq. ft.	534
450 sq. ft.	30
450 sq. ft.	192
450 sq. ft.	130
450 sq. ft.	35
450 sq. ft.	535
500 sq. ft.	31
500 sq. ft.	131
500 sq. ft.	536
500 sq. ft.	36
550 sq. ft.	193
550 sq. ft.	103
575 sq. ft.	40
575 sq. ft.	140
575 sq. ft.	44
575 sq. ft.	544
600 sq. ft.	185
650 sq. ft.	194
650 sq. ft.	41
650 sq. ft.	141
650 sq. ft.	45
650 sq. ft.	545
700 sq. ft.	222
700 sq. ft.	104
725 sq. ft.	46
725 sq. ft.	546
750 sq. ft.	150
775 sq. ft.	186
800 sq. ft.	54
800 sq. ft.	223
800 sq. ft.	554
850 sq. ft.	151
875 sq. ft.	224
900 sq. ft.	55
900 sq. ft.	555
975 sq. ft.	56
975 sq. ft.	556
975 sq. ft.	252
1000 sq. ft.	160
1000 sq. ft.	187
1025 sq. ft.	253
1050 sq. ft.	57
1050 sq. ft.	557
1100 sq. ft.	245
1100 sq. ft.	254
1150 sq. ft.	161
1200 sq. ft.	64
1200 sq. ft.	564
1250 sq. ft.	188
1250 sq. ft.	282
1350 sq. ft.	65
1350 sq. ft.	565
1375 sq. ft.	283
1450 sq. ft.	246
1475 sq. ft.	66
1475 sq. ft.	566
1500 sq. ft.	284
1575 sq. ft.	67
1575 sq. ft.	567
1650 sq. ft.	312
1700 sq. ft.	74
1700 sq. ft.	574
1800 sq. ft.	313
1800 sq. ft.	247
1875 sq. ft.	75
1875 sq. ft.	575
1950 sq. ft.	314
2025 sq. ft.	76
2025 sq. ft.	576
2075 sq. ft.	342
2150 sq. ft.	248
2150 sq. ft.	77
2150 sq. ft.	577
2225 sq. ft.	84
2250 sq. ft.	343
2400 sq. ft.	85
2400 sq. ft.	344
2450 sq. ft.	249
2550 sq. ft.	86
2675 sq. ft.	87
2700 sq. ft.	250
3050 sq. ft.	3606
3625 sq. ft.	3607
4200 sq. ft.	3608
4775 sq. ft.	3609
5350 sq. ft.	3610
5925 sq. ft.	3611
6500 sq. ft.	3612
6750 sq. ft.	4805
7750 sq. ft.	4806
9250 sq. ft.	4807
10750 sq. ft.	4808
12250 sq. ft.	4809
13750 sq. ft.	4810

STEAM BOILERS

Rating	Boiler Number
175 sq. ft.	17
175 sq. ft.	201
225 sq. ft.	320
225 sq. ft.	300
225 sq. ft.	22
250 sq. ft.	202
275 sq. ft.	1920
275 sq. ft.	301
275 sq. ft.	340
300 sq. ft.	32
300 sq. ft.	350
300 sq. ft.	132
300 sq. ft.	400
350 sq. ft.	1930
350 sq. ft.	401
350 sq. ft.	430
375 sq. ft.	203
400 sq. ft.	1940
400 sq. ft.	42
400 sq. ft.	142
400 sq. ft.	1850
400 sq. ft.	402
400 sq. ft.	440
425 sq. ft.	2220
450 sq. ft.	450
450 sq. ft.	500
475 sq. ft.	204
475 sq. ft.	2230
525 sq. ft.	152
525 sq. ft.	1860
525 sq. ft.	501
525 sq. ft.	2240
525 sq. ft.	530
575 sq. ft.	2520
600 sq. ft.	502
600 sq. ft.	540
650 sq. ft.	2530
675 sq. ft.	162
675 sq. ft.	1870
675 sq. ft.	2450
675 sq. ft.	550
700 sq. ft.	600
725 sq. ft.	2540
750 sq. ft.	2820
775 sq. ft.	630
825 sq. ft.	1880
825 sq. ft.	601
875 sq. ft.	2830
875 sq. ft.	640
900 sq. ft.	2460
950 sq. ft.	650
975 sq. ft.	602
1000 sq. ft.	2840
1050 sq. ft.	701
1100 sq. ft.	740
1100 sq. ft.	3120
1100 sq. ft.	2470
1200 sq. ft.	702
1225 sq. ft.	750
1250 sq. ft.	3130
1300 sq. ft.	2480
1350 sq. ft.	760
1400 sq. ft.	703
1400 sq. ft.	3140
1450 sq. ft.	2490
1500 sq. ft.	3420
1600 sq. ft.	801
1600 sq. ft.	2500
1675 sq. ft.	3430
1850 sq. ft.	802
1850 sq. ft.	3440
1900 sq. ft.	636
2250 sq. ft.	736
2250 sq. ft.	803
2600 sq. ft.	836
2950 sq. ft.	936
3300 sq. ft.	1036
3650 sq. ft.	1136
4000 sq. ft.	1236
4400 sq. ft.	548
4700 sq. ft.	648
5600 sq. ft.	748
6500 sq. ft.	848
7400 sq. ft.	948
8300 sq. ft.	1048

SIZES OF FIRE DOOR OPENINGS

"Our Own" Hot Water and Steam Boilers

TANK HEATERS

Series A

14½ and 14¾	6½ x 11

Stark

107-108	5¼ x 7
109-110	6 x 9¾

HOT WATER HEATERS

Series B

15-16	6½ x 11
20 to 41	7½ x 12

Series C

101-2-3	7½ x 12
104	8½ x 13

Series D

33 to 46	7½ x 12
54 to 67	8½ x 13
74 to 87	9¾ x 13¾

Series E

3606 to 3612	13 x 20

Series F

130 to 141	7½ x 12
150 to 161	8½ x 13

Series G

185 to 188	8½ x 13
245 to 250	8½ x 13

For Wood Burning

185 to 250	15 x 12½

Rival

192 to 194	8½ x 11¾
222 to 254	8½ x 12½
282 to 344	8½ x 15

Roman

533 to 546	7½ x 12
554 to 567	8½ x 13
574 to 577	9¾ x 13¾

Courtland

4806 to 4810	11 x 17½

STEAM BOILERS

Series M

17	6½ x 11
22 to 42	7½ x 12

Series N

201 to 203	7½ x 12
204	8½ x 13

Series P

636 to 1236	13 x 20

Series Q

132 and 142	7½ x 12
152 and 162	8½ x 13

Series R

1850 to 1880	8½ x 13
2450 to 2500	8½ x 13

Hesper

300 to 402	7½ x 12
500 to 602	8½ x 13
701 to 803	9¾ x 13¾

Rival

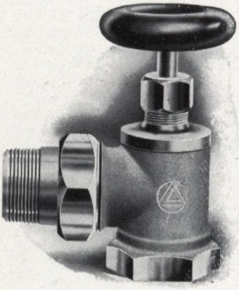
1920 to 1940	8½ x 11¾
2220 to 2540	8½ x 12½
2820 to 3440	8½ x 15

Roman

330 to 450	7½ x 12
530 to 650	8½ x 13
740 to 760	9¾ x 13¾

Courtland

648 to 1048	11 x 17½



IMPROVED
BONNETLESS, QUICK OPENING
HOT WATER RADIATOR VALVES

(Patented)

STEAM METAL

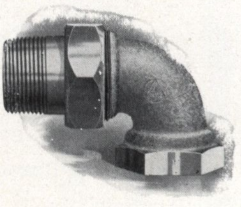
THREADS—
Right Hand on Union.
Right Hand on Bottom.

No bonnet; body in one piece saving one screwed joint; waterways full and free when turning handle. Threads in stem move entire shell down when opening and up when closing. No sticking possible.

PRICE LIST—With Union

No.	Size..............................	½	¾	1	1¼	1½	2
99	Rough Body, fin. trimmings...	$ 2 05	$ 2 45	$ 3 25	$ 4 50	$ 6 50	$10 00
100	Rough body, ptd. trimmings....	2 30	2 60	3 35	4 90	6 65	10 25
*101	Rough body, plated all over.....	2 40	2 85	3 65	5 05	7 10	10 85
102	Finished body..................	......	3 00	3 85	5 25	7 50	11 50
103	Finished body, plated all over..	2 90	3 40	4 30	5 80	8 10	12 35

UNION ELBOWS FOR RADIATORS

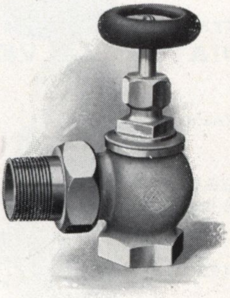


Both Threads Right Hand

PRICE LIST

No.	Size..........................	½	¾	1	1¼	1½	2
130	Rough body, plain...............	$ 1 50	$ 1 75	$ 2 25	$ 2 95	$ 3 70	$ 6 00
131	Rough body, ptd. trimmings....	1 65	1 90	2 40	3 10	3 85	6 15
*132	Rough body, plated all over.....	1 75	2 00	2 50	3 20	4 00	7 00
133	Finished all over...............		2 20	2 75	3 60	4 60	7 50
134	Finished and plated all over....	2 25	2 40	3 00	3 90	4 85	8 50

* Regular stock finish. Others made on order.



SCREW STEM

STEAM RADIATOR VALVE

Steam Metal.

With Union.

THREADS—
Right Hand on Union.
Right Hand on Bottom.

PRICE LIST—With Jenkins Discs

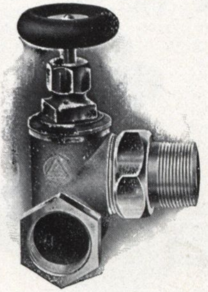
No.	Size	½	¾	1	1¼	1½	2
71	Rough body, plated trimmings	$ 3 10	$ 3 75	$ 4 65	$ 6 25	$ 8 00	$12 00
*72	Rough body, plated all over	3 15	3 80	4 75	6 40	8 10	13 10
73	Finished body	......	4 00	4 80	6 40	8 75	13 85
74	Finished body, plated all over	3 65	4 25	5 25	7 00	9 25	14 35
	Jenkins Disc	.....	10	12	18	25	36

SCREW STEM CORNER VALVE

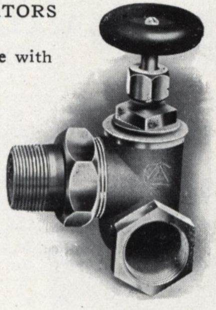
FOR STEAM RADIATORS

With Jenkins Discs.

The only Corner Valve with full pipe area.



RIGHT HAND VALVE.
Threaded Right Hand on Union
Right Hand on Bottom.



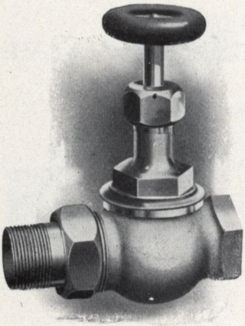
LEFT HAND VALVE.
Threaded **Right Hand on Union**
Right Hand on Bottom.

When ordering state whether Right or Left Hand Valves are required. Give numbers and sizes. Prices mailed on Brass Discs if required.

PRICE LIST—With Union

No.	Size	†¾	1	1¼	1½	2
31	Rough body, plated trimmings	$ 4 15	$ 5 15	$ 6 90	$ 8 80	$14 15
*32	Rough body, plated all over	4 20	5 25	7 05	8 95	14 45
34	Finished body, plated all over	4 85	6 00	7 80	9 95	15 95

* Regular stock finish. Others made on order.
†Can supply ½ inch size from ¾ inch list.



SCREW STEM GLOBE

STEAM RADIATOR VALVE

With Jenkins Discs.

THREADS—
Right Hand Both Openings.

EXTRA HEAVY TYPE.

PRICE LIST—With Union

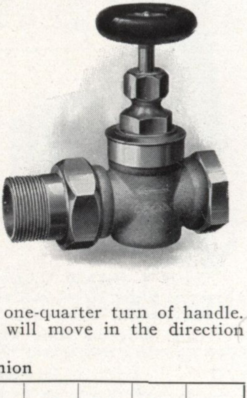
No.	Size..................................	¾	1	1¼	1½	2
55	Rough body, finished trimmings........	$ 3 50	$ 4 30	$ 5 85	$ 7 75	$12 60
56	Rough body, plated trimmings......	3 75	4 65	6 25	8 00	12 85
*57	Rough body, plated all over............	3 80	4 75	6 40	8 10	13 10
58	Finished body....................	4 00	4 80	6 40	8 75	13 85
59	Finished body, plated all over...........	4 25	5 25	7 00	9 25	14 35
	Jenkins Discs........	10	12	18	25	36

QUICK OPENING STRAIGHTWAY

HOT WATER RADIATOR VALVE

Steam Metal.

THREADS—
Right Hand on Union.
Right Hand on Female Union.



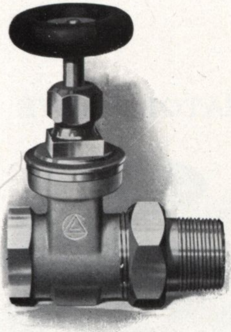
This valve can be fully opened or closed by one-quarter turn of handle. It must be connected so the current of water will move in the direction indicated by the arrow on the side.

PRICE LIST—With Union

No.	Size..................................	¾	1	1¼	1½	2
114	Rough body, finished trimmings........	$ 2 45	$ 3 25	$ 4 50	$ 6 50	$10 00
115	Rough body, plated trimmings..........	2 60	3 35	4 90	6 65	10 25
*116	Rough body, plated all over............	2 85	3 65	5 05	7 10	10 85
117	Finished body...........................	3 00	3 85	5 25	7 50	11 50
118	Finished body, plated all over..........	3 40	4 30	5 80	8 10	12 35

* Regular stock finish. Others made on order.

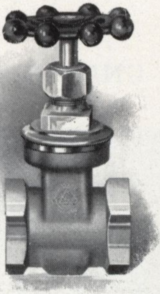
BRASS GATE VALVE



No. 373
Wood Wheel, Double Gate
Screwed—with Unions
Rough Body—Plated all over.

Non-Rising Stem.

Most compact valve in the market due to best distribution of metal.



No. 335
Iron Wheel, Double Gate
Screwed—without Union
Rough Body Plain.

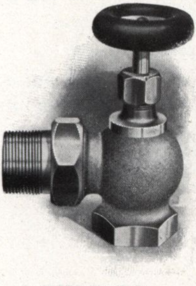
PRICE LIST

No.	Size	½	¾	1	1¼	1½	2	2½
335	Price, each	$ 1 30	$ 1 75	$ 2 50	$ 3 50	$ 5 00	$ 7 50	$14 00
373	Price, each	3 10	3 75	4 65	6 10	7 85	12 10	.....

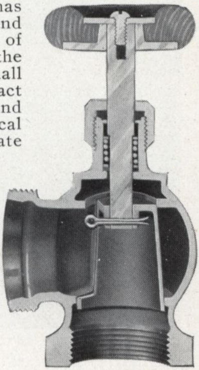
Improved Quick-Opening Hot Water Radiator Valve

Steam Metal (Patented)

This new valve fully answers any criticism that has heretofore been made concerning the construction and operation of hot water valves. The globular form of body assists in preventing sticking on the shell, for the reason that it brings only a small portion of the shell in contact with the body at the top and bottom and at a narrow vertical strip on either side where a gate is formed for closing the water way. Tapering shell permits taking up any wear occurring in valve. The spring in bonnet of valve holds the conical shell up to its seat, at the same time exerting a downward pressure on the small rubber washer slipped over the stem and held within the chamber in cup of valve. The pressure of spring expands the rubber gasket so as to provide a "self-packing" feature.



THREADS—
Right Hand on Union
Right Hand on Bottom



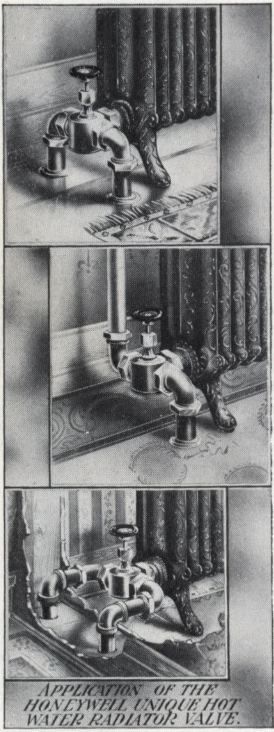
Sectional View

PRICE LIST—With Union

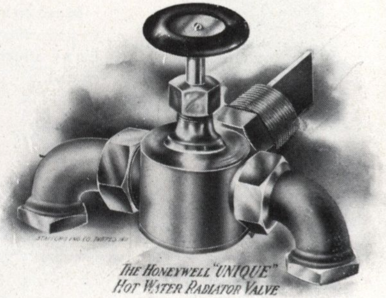
No.	Size	½	¾	1	1¼	1½	2
140	Rough body, Fin. trimmings	$ 2 05	$ 2 45	$ 3 25	$ 4 50	$ 6 50	$10 00
141	Rough body, ptd. trimmings	2 30	2 60	3 35	4 90	6 65	10 25
*142	Rough body, plated all over	2 40	2 85	3 65	5 05	7 10	10 85
143	Finished body	....	3 00	3 85	5 25	7 50	11 50
144	Finished body, ptd. all over.	2 90	3 40	4 30	5 80	8 10	12 35

* Regular stock finish. Others made on order.

THE
UNIQUE HOT WATER RADIATOR VALVE



APPLICATION OF THE HONEYWELL UNIQUE HOT WATER RADIATOR VALVE.



THE HONEYWELL "UNIQUE" HOT WATER RADIATOR VALVE

This Valve enjoys such a wide reputation that it is useless to dwell much on its merits or construction.

Designed to be connected to one end of radiator only.

Only necessary to extend risers through the floor to the valve.

Avoids taking up the floor.

Avoids cutting joists and timbers.

Water is caused to circulate in one positive direction.

Simplifies the piping.

Reduces expense.

Lessens labor.

Size	½ in.	¾ in.	1 in.	1¼ in.
Center of Elbows	5⅛ in.	5¾ in.	7 in.	7½ in.
Center of Spud to bottom of Ell	1¾ in.	1¾ in.	2 in.	2⅝ in.
End of Spud to center of Body	2⅞ in.	2⅞ in.	3 in.	3¼ in.
Radiators should be tapped	1¼ in.	1¼ in.	1½ in.	2 in.
List Price, each	$4.25	$5.40	$5.80	$7.95

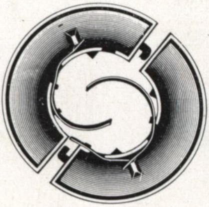
"Model"

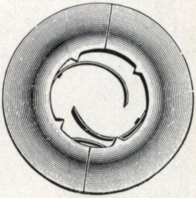
FLOOR AND CEILING PLATES

These plates are made of grey iron and are the most practical plates made that can be put on after the work is finished, and can be secured in position permanently.

No arguments necessary to convince any steam fitter of the practicability and utility of these plates.

Can be furnished either nickeled or black.

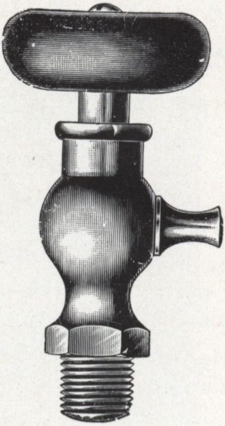




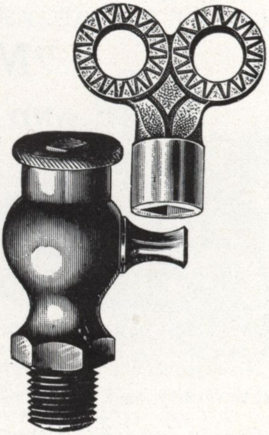
Size..........	½	¾	1	1¼	1½	2	2½	3	3½	4
Black.........	.14	.14	.18	.20	.24	.28	.43	.60	.90	1.25
Nickel........	.25	.25	.28	.32	.35	.38	.52	.75	1.10	1.50

COMPRESSION RADIATOR AIR VALVES

Nickel Plated One-eighth Inch.



No. 2



No. 4

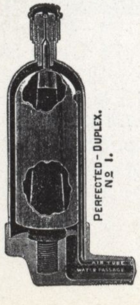
Price, per dozen..$2.50

MIDGET STEAM AIR VALVES

Positive and Automatic.

Price, per dozen..$7.50

PERFECTED DUPLEX No. 1 AUTOMATIC STEAM AIR VALVES



It is the only Valve on the market made with a separate air tube and water passage.

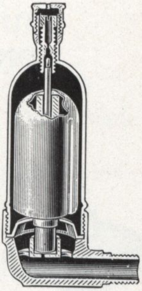
Will not leak water or steam.

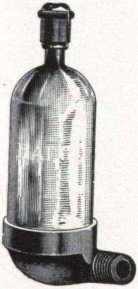
Every Valve warranted for five years.

Price, each..................................$1.15

Ball Joint Royal Syphon Float Valve

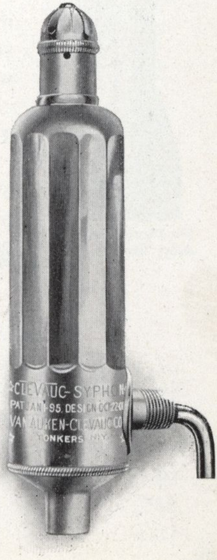
Price, each..................................$1.15





"Our Own" Automatic Float and Expansion Air Valve

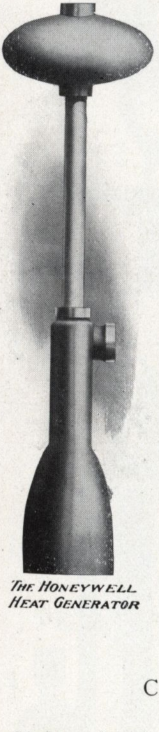
Price, each...$1.00



Clevauc Syphon Automatic Air Valve

Price, each..............................$1.25

HONEYWELL HEAT GENERATORS



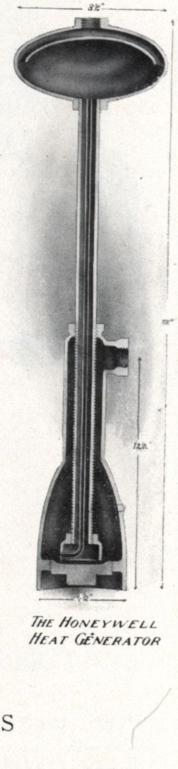
THE HONEYWELL HEAT GENERATOR

These Generators were designed to lessen the expense of installing Hot-Water Heating plants and increase their efficiency.

It accomplishes this, on account of the radiators being smaller, and the piping being reduced there is a smaller quantity of water to heat; the circulation quickened; the range of temperature widened, and less fuel required.

It has no valves and operates automatically by mercury, generating a pressure of ten pounds on the water, without any possibility of sticking and causing dangerous pressure.

Sectional outline view herewith shows mercury seal, connections to system, equalizing pipe, and deflecting plate.

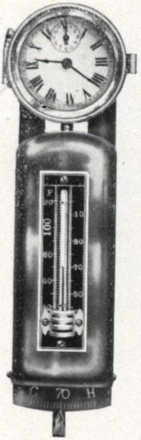


THE HONEYWELL HEAT GENERATOR

CAPACITIES AND LIST PRICES

No. 1	Carries up to 1200 square feet of radiation	$25.00
No. 2	Carries up to 2500 square feet of radiation	35.00
No. 3	Carries up to 3500 square feet of radiation	50.00
No. 4	Carries up to 10000 square feet of radiation	65.00

THE HONEYWELL TEMPERATURE REGULATOR



TIME CLOCK
THERMOSTAT

The most dependable, positive and simple regulator made.

Motor operates the dampers by a positive and gradual moving arm or lever.

Small, compact, neat.

Speed controlled by noiseless and positive acting governor.

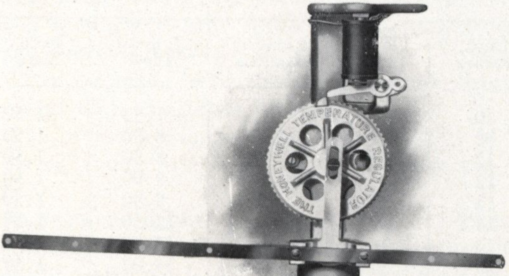
No springs or delicate parts in motor to rust and cause trouble.

Thermostat small, attractive and ornamental.

Sells for one-half the price of other regulators.

PRICE LIST

Regulator without time clock	$25.00
Regulator with time clock	35.00

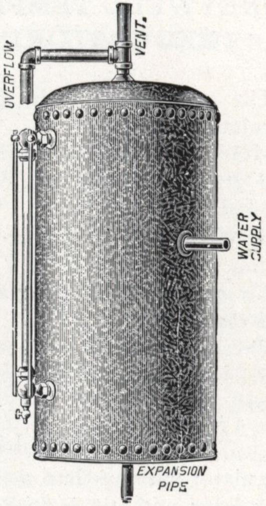


MOTOR

Special Butterfly Check Dampers should be used if check damper on heater is small, and best results wanted.

PRICE LIST

For 6 inch Smoke Pipe	$2.00
For 8 inch Smoke Pipe	2.50
For 10 inch Smoke Pipe	3.00

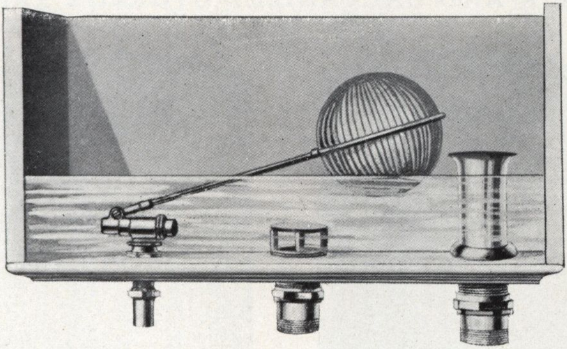


EXPANSION TANK LIST

Amt. of Radiat'n	Diam. Inches	Length Inches	Capacity Gallons	Price of Tanks	Price of Gauge
250	10	20	8	$ 7.50	$1.50
300	12	20	10	8.00	1.50
400	12	24	12	8.50	1.50
500	12	30	15	9.00	1.50
600	12	36	18	9.50	1.50
700	14	30	20	12.50	1.50
800	14	36	24	13.00	1.50
950	16	30	26	14.00	1.50
1300	16	36	32	15.00	1.75
2000	16	48	42	16.50	1.75
3000	18	60	66	31.00	1.75
5000	20	60	82	37.00	1.75
6000	22	60	100	51.00	1.75
7000	24	60	120	58.00	2.00

Our Expansion Tanks are thoroughly galvanized both inside and outside. Unless otherwise specified, the vent expansion pipe and water supply openings are all tapped for 1-inch diameter pipe connections. The water gauge openings are ½-inch pipe-size, and spaced 12-inch centers.

AUTOMATIC EXPANSION TANKS



Interior View.

This Automatic Expansion Tank, aside from being ornamental, is absolutely automatic in its operation, insuring a full supply of water for the entire system, as well as taking care of the overflow water.

They are made of hardwood, lined with sheet copper, and provided with cast brass fittings.

The ordinary expansion tank is unsightly in a bath room or living room, and if placed in the attic the water might freeze.

It requires neither altitude gauge, nor gauge glass and trimmings, and is of ample capacity for use in connection with hot water work of 3000 feet of radiation or less.

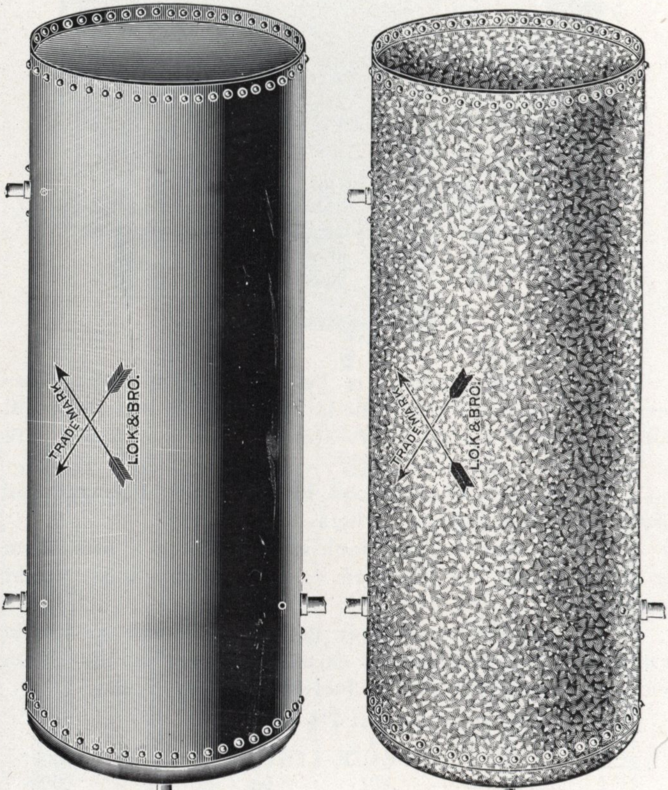
Size, 9 x 20 x 10. Capacity, 7½ gallons.

PRICE LIST

Including expansion and overflow couplings,
with iron pipe thread.

In plain oak, finished plain varnish	$8.00
If finished in cabinet finish, add to list	1.00

BLACK AND GALVANIZED STORAGE TANKS


TRADE MARK
L.O.K.&BRO.
TRADE MARK
L.O.K.&BRO.

Can be equipped with coils at a slight additional cost.

Prices on application.

Price List on Iron Hot Water Tanks
$\frac{3}{16}$ inch Shell and ¼ inch Heads.

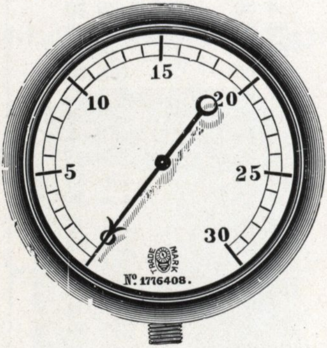
Capacity Gallons	Size Inches	Price Black	Price Galvanized
66	18 x 60	$ 48.00	$ 70.00
82	20 x 60	54.00	78.00
100	22 x 60	59.00	87.00
120	24 x 60	64.00	94.00
144	24 x 72	72.00	108.00
150	30 x 48	77.00	112.00
185	30 x 60	84.00	125.00
225	30 x 72	91.00	141.00
260	30 x 84	109.00	159.00
300	30 x 96	118.00	176.00
370	30 x 120	130.00	194.00
210	36 x 48	91.00	141.00
265	36 x 60	100.00	154.00
290	36 x 66	105.00	165.00
315	36 x 72	110.00	170.00
360	36 x 84	134.00	200.00
415	36 x 96	144.00	215.00
520	36 x 120	165.00	247.00
360	42 x 60	134.00	200.00
430	42 x 72	150.00	220.00
500	42 x 84	170.00	246.00
575	42 x 96	186.00	268.00
720	42 x 120	220.00	310.00

Price List on Iron Hot Water Tanks
¼ inch Shell and ⅜ inch Head.

Capacity Gallons	Size Inches	Price Black	Price Galvanized
150	30 x 48	$ 82.00	$131.00
185	30 x 60	92.00	148.00
225	30 x 72	102.00	166.00
260	30 x 84	120.00	184.00
300	30 x 96	130.00	204.00
370	30 x 120	142.00	232.00
210	30 x 48	102.00	166.00
265	36 x 60	110.00	180.00
290	36 x 66	115.00	195.00
315	36 x 72	120.00	200.00
360	36 x 84	144.00	224.00
415	36 x 96	154.00	242.00
520	36 x 120	175.00	275.00
360	42 x 60	144.00	224.00
430	42 x 72	160.00	245.00
500	42 x 84	180.00	276.00
575	42 x 96	196.00	300.00
720	42 x 120	230.00	350.00

The above price lists include four tappings for water connections, tappings not to be larger than 2-inch iron pipe size. Special tappings, manholes and handholes, when desired, will be charged extra in addition to the price for tanks.

LOW PRESSURE STEAM GAUGES



Size 5 inch dial, iron case, brass rim, silvered dial, registering 30 pounds pressure, and in every respect the same gauge as supplied on "Our Own" Steam Boilers.

Each and every gauge is tested and calibrated before leaving the factory by an original method of great accuracy.

Price, including cock..................................$8.00 each

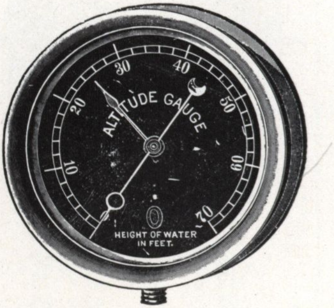
Prices on high pressure gauges on application.

We are in position to also furnish combination pressure and vacuum gauges. Prices on application.

ALTITUDE GAUGES

These gauges will indicate accurately, at the boiler, the height of water in the system, and will be found very useful instruments.

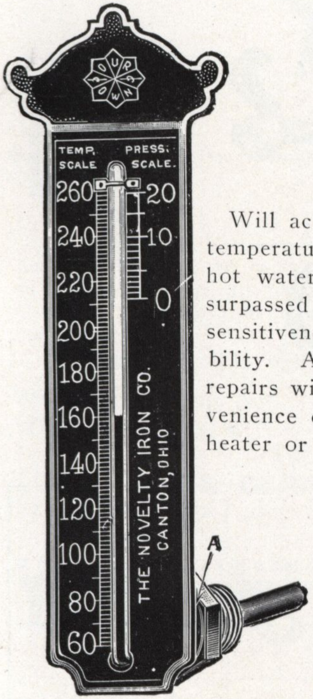
Explanation: When the water is at its proper level in expansion tank, remove the ring and glass, and set the stationary hand at the pressure indicated by the working hand; whenever the pressure falls below the stationary or red hand, water should be added.



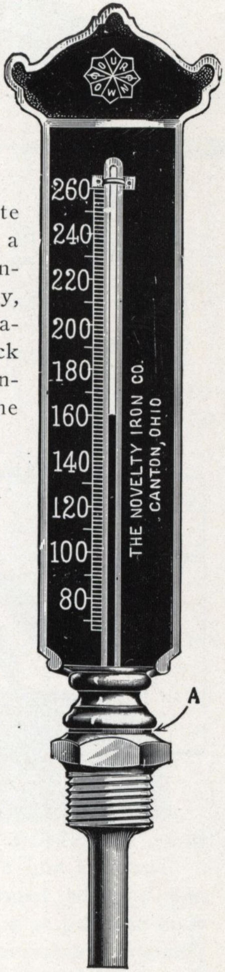
Size, 5 inch dial, iron case, with nickel plated rim.

Price, including cock..................................$8.00 each

HOT WATER THERMOMETERS



Will accurately indicate temperature of water in a hot water apparatus; unsurpassed for accuracy, sensitiveness and durability. Admits of quick repairs without the inconvenience of emptying the heater or system.



The glass bulb of each instrument is immersed in a mercury bath, protected by a thin steel tube, so that there is little chance of injury.

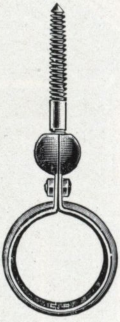
Each thermometer is carefully packed in a separate wooden box.

Every hot water system should be equipped with one.

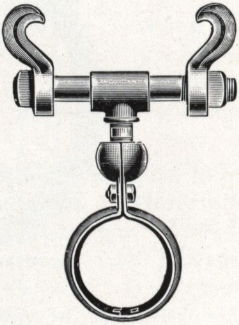
	List Price Each
Hot Water Thermometer, straight..	$5.00
Hot Water Thermometer, angle....	6.00

HANNA BALL-JOINT PIPE HANGERS

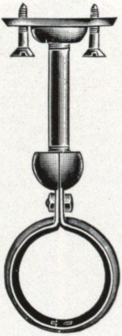
Malleable Iron, Plain



No. 1



No. 2



No. 3

PRICE LIST

Size pipe	½	¾	1	1¼	1½	2	2½	3
Style No. 1	$ 0 15	$ 0 18	$ 0 18	$ 0 20	$ 0 22	$ 0 25	$ 0 30	$ 0 35
" " 2	55	58	58	60	62	65	70	75
" " 3	30	33	33	35	37	40	55	62

Size Pipe	3½	4	5	6	7	8	10	12
Style No. 1	$ 0 37	$ 0 45	$ 0 58	$ 0 70	$ 1 05	$ 1 20	$ 1 60	$ 1 90
" " 2	77	85	98	1 10	1 45	1 60	2 00	2 30
" " 3	70	83	1 05	1 20	1 55	1 70	2 00	2 30

List on Beam Clamp only, No. 2, without hanger, 40 cents.

Only plain hangers carried in stock. All styles may be had tinned, nickel-plated, or polished. Prices on application.

The lags and nipples are ⅛, ¼, ⅜, ½, and ¾ inch size, and may be lengthened to any required distance with a coupling and a piece of pipe. The nipples on the No. 3 Hangers are furnished 5 inches long. When ordering No. 2 Hanger, state size of iron beam.

RADIATOR BRUSHES

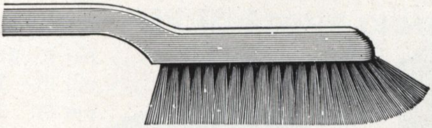


Fig. A

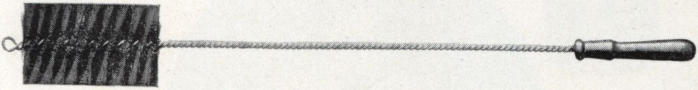


Fig. B

The Radiator Brushes illustrated herewith were especially designed for use on radiators, their construction being such as to allow them to be passed between the sections, and cleaning surfaces that could not be reached in any other manner.

A very serviceable, valuable and indispensable article.

Wood Handle, Fig. A	$0.60
Wire Handle, Fig. B	.75

FLUE CLEANING BRUSHES

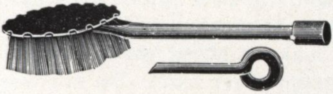


Fig. P

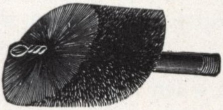


Fig. G

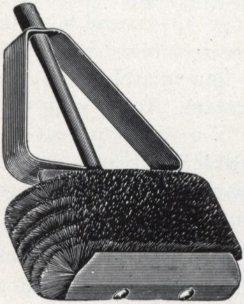


Fig. C

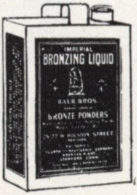
PRICE LIST

Fig. P with handle	each	$1.00
Fig. G with handle	each	1.50
Fig. C with handle	each	2.00
Fig. P without handle	each	.75
Fig. G without handle	each	1.00
Fig. C without handle	each	1.50

BRONZE POWDERS

LIST PRICE

Pale Gold, brilliant	per lb.	$1.80
Aluminum	per lb.	3.00
Copper	per lb.	2.25
Other shades	per lb.	3.00
Liquid		
In 1 gal cans	per gal.	$3.00
In ½ gal. cans	per gal.	3.30



DIRECTIONS FOR USE

Bronze

Use yellow priming paint (free from oil) for all colors except silver and aluminum, for which a white priming is more suitable. Mix bronze into as much liquid as you will use immediately, sufficient to make it about the consistency of cream. Apply with a fitch brush (bear hair). Do not work it any more than necessary with the brush—cover surface, if possible, with one stroke of brush. Applying bronze when radiators are warm improves the lustre.

Liquid

Keep the liquid can closed tight when not in use. Liquid left uncorked a very short time evaporates and thickens, and becomes worthless. Do not get any bronze in liquid can, as the smallest particle will turn it green. Liquid, if properly used, will not have to be thinned. Do not use a dirty mixing pot or brush, and see that all dried-up bronze is carefully removed before mixing fresh. One pound of bronze will cover about 300 square feet of radiation, one coat. Proportion, five pounds of bronze to one gallon of liquid.

"OUR OWN" "IRON" STOVE CEMENT

An Oil Putty

For mounting Hot Water and Steam Heaters and Stoves, or for Iron Joints exposed to temperature of 400° or under.

The finest article in the market. It is easily worked, will not drop out of joints while being mounted. Dries hard in the joints, yet keeps well in stock in cans or barrel.

Bakes hard under heat, and finally does not honeycomb or crumble in the joints.

PRICE LIST

1 lb. cans	10c per lb.
2 lb. cans	9½c per lb.
3 lb. cans	8c per lb.
4 lb. cans	7½c per lb.
5 to 15 lb. cans	7c per lb.
20 to 25 lb. cans	6c per lb.
50 lb. tubs	5½c per lb.
100 to 400 lb. kegs	4½c per lb.
400 to 800 lb. barrels	4c per lb.

Paint, Enamel, Japan and Asphaltum supplied in quantities to suit the trade. Prices quoted on application.

The following is an estimated amount of plastic asbestos cement required to cover the various sizes of "Our Own" Boilers, approximately one inch thick.

SERIES B and M

No.	Pounds
15	75
16, 17, 20	100
21, 22, 30	125
31, 32, 40	150
41, 42	175

SERIES C and N

101	75
102	100
103	125
104, 201	150
202	175
203	200
204	225

SERIES F and Q

130	125
131, 132, 140	150
141, 142, 150	175
151, 152	200
160	225
161, 162	250

ROMAN

Water and Steam

533	100
534, 330	125
535, 544	150
340	150
536, 545	175
350, 430	175
546, 554	200
440	200
555, 450	225
530	225
556, 564	250
540	250
557, 565	275
574, 550	275
630	275
566, 575	300
640, 740	300
567, 576	325
650, 750	325
577, 760	350

24-inch SERIES G and R

No.	Pounds
245	150
246	175
247, 2450	200
248, 2460	225
249, 2470	250
250, 2480	275
2490	300
2500	325

SERIES E and P

3606, 636	350
3607, 736	375
3608, 836	425
3609, 936	450
3610, 1036	500
3611, 1136	525
3612, 1236	550

COURTLAND

Water and Steam

548, 4805	500
648, 4806	600
748, 4807	700
848, 4808	800
948, 4809	900
1048, 4810	1000

HESPER

300	150
301, 400	175
401	200
402, 500	225
501	250
502, 600	275
601	300
602, 701	325
702	350
703, 801	375
802	400
803	425

18-inch SERIES G and R

No.	Pounds
185	100
186	125
187, 1850	150
188, 1860	175
1870	200
1880	225

SERIES D

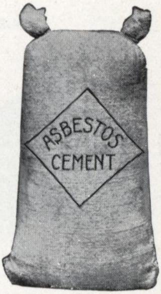
33	100
34	125
35, 44	150
36, 45	175
46, 54	200
55	225
56, 64	250
57, 65, 74	275
66, 75, 84	300
67, 76, 85	325
86	350
87	375

RIVAL

Water and Steam

192	100
193, 1920	125
194, 1930	150
222	150
223, 1940	175
2220	175
224, 2230	200
252	200
2240, 253	225
2520	225
2530, 254	250
282	250
283, 2820	275
2540	275
284, 2830	300
312	300
2840, 3120	325
313, 342	325
314, 3130	350
343, 3420	350
344, 3430	375
3140	375
3440	400

PLASTIC ASBESTOS CEMENT



Our cements are made of asbestos fibre, magnesia, infusional earth, and other carefully selected ingredients to insure strength and neat appearance.

They are absolutely fire-proof, good non-conductors, and may be depended upon in any and all circumstances.

Steam-fitters prefer it because it carries good "body," yet is light and easy to work in awkward positions.

INSTRUCTIONS FOR APPLYING

To Boilers, Domes, Heaters, Etc.

The cement is usually applied in three coats one-half inch to three-quarter inch thick, regulated according to the total thickness required. The material is mixed with water in an ordinary box to a consistency of mortar and should be allowed to stand several hours before using. For applying, use an ordinary plasterer's trowel.

Apply the first coat about one-half inch thick to the boiler while it is cold, leaving the surface rough in order that the second coat may properly adhere. Stop back about one inch from all manholes, doors and other openings, and when putting on last coat, finish up the edges around all openings to a nice bevel.

After the first coat is on, and before applying the second coat, a little hot water or steam should be introduced into the boiler to warm it, thus facilitating the work by drying the cement. After the first coat is thoroughly dry, the second coat may be applied in the same manner as the first, leaving it rough for the reception of the next coat. The third or last coat is applied in the same manner, and by the use of a trowel or plasterer's float, is given a smooth, hard finish.

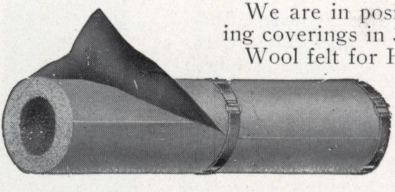
NOTE—The boiler should be kept quite hot during the application, as each coat should be thoroughly dry before proceeding with the next.

☞ When using corrugated perforated iron lath in connection with the Plastic Cement the sheets should be placed around the boiler or other surface to be covered, and secured in position by running heavy iron wires through the perforations in the ends of the iron, after which the cement may be prepared and applied as above. The iron may be cut to fit around doors, manholes, etc., with tinner's shears.

Prices sent promptly on request.

PIPE COVERINGS

Asbestos-Magnesia Moulded Covering



For High Pressure Steam Pipes.

We are in position to furnish the following coverings in 3 foot lengths:

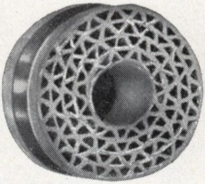
Wool felt for Hot Water Pipes, ½, ¾ and 1 inch thick.

Woolsel for Hot Water Pipes, 2, 3 and 4 ply.

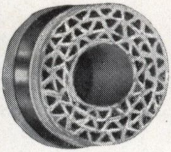
Asbestos-Magnesia for Steam Pipes, 1 inch thick.

Asbestos Air Cell for Steam Pipes, 2, 3 and 4 ply.

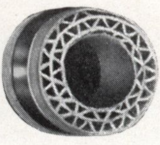
AIR CELL COVERINGS



4 Ply.



3 Ply.



2 Ply.

Standard Price List of Sectional Pipe Coverings and Fittings

Inside Diam. of Pipe Inches	Price Per Lineal Foot	Elbows	Tees	Crosses	Valves
½	$0.22	$0.30	$0.36	$0.48	$0.54
¾	.24	.30	.36	.48	.54
1	.27	.30	.36	.48	.54
1¼	.30	.30	.36	.48	.54
1½	.33	.30	.36	.48	.54
2	.36	.36	.42	.54	.60
2½	.40	.42	.48	.60	.78
3	.45	.48	.54	.70	.96
3½	.50	.54	.60	.80	1.20
4	.60	.60	.75	.95	1.50
4½	.65	.72	.90	1.10	1.85
5	.70	.90	1.20	1.50	2.25
6	.80	1.30	1.60	2.00	2.80
7	1.00	1.80	2.20	2.80	3.60
8	1.10	2.40	3.00	3.60	4.40
9	1.20	3.00	3.80	4.40	5.30
10	1.30	3.60	4.60	5.20	6.20
12	1.85				

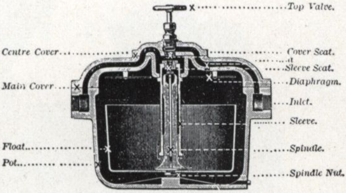
Pipe Fittings are one inch thick.

In order to prevent confusion we have but one price list for our different kinds of Coverings up to and including one inch in thickness.

Our DISCOUNTS regulate the cost of goods.

THE "NASON" TRAPS

Size No. 1
For Pressures of 80 Pounds
or Less



SECTION

Number of Steam Trap	1	2	3	4	5
Size of Pipe Connections.... inch	½	¾	1	1¼	1½
Diameter outside of Flanges. "	10¾	14¼	15¾	19	24¼
Diameter of Cylinder......... "	8	10½	12	14	18
Height to top of Valve....... "	11	14	16¼	18½	23½
Height to top of Cover .... "	8	10	12	14	15½
Maximum discharge lbs. water per minute	2	5	8	12	20
Greatest number of square feet of surface to which it should be applied	350	900	1400	2000	3500
Greatest number of lineal feet of 1-inch pipe surface to which it should be applied	1050	2700	4200	6000	10500
Weight, "Nason"..........pounds	40	80	113	176	336
Weight, "Sidelug" .... "	47	92	125	212	343
Price, "Nason"... .... "	$16 00	$20 00	$27 50	$42 50	$70 00
Price, "Sidelug"........... "	16 85	21 30	29 25	45 50	74 75

SPECIAL SERVICE

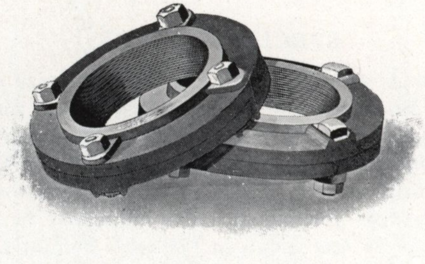
For indirect steam heating apparatus the size of the trap used should be at least 40 per cent larger than that given in the table, and if the coils are under the action of a blast from a fan or blower, the size of trap must be still further largely increased. For special service, such as separators, vacuum pans, slashers, or for steam coils immersed in water, the number of square feet given in the table cannot be taken as an index of the size to be used. The amount of water to be discharged must be otherwise estimated, preferably by weighing the amount collected per minute, and the size selected by this method from the table.

REDUCING "Y" FITTINGS

PRICE, EACH

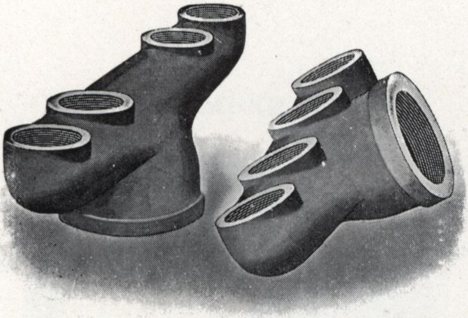
3 x 2	4 x 3	5 x 4	6 x 5
$2.90	$4.60	$8.00	$10.60

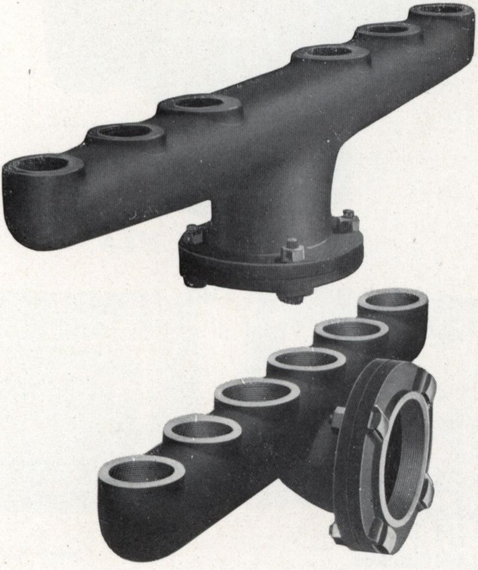
FLANGE UNIONS FACED WITH GASKETS



3	3½	4	4½	5	6
$1.50	$1.80	$2.10	$2.70	$3.15	$3.95

BRANCH HEADERS





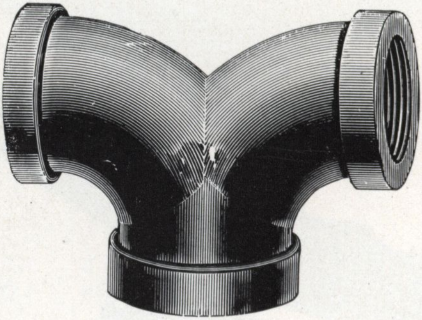
PER PAIR

3"x4-2"	4"x4-2"	5"x6-2"	6"x8-2"	6"x10-2"
$12.00	$12.00	$21.00	$39.00	$45.00

All headers above 4-inch are flanged.

Can be used in connection with any of "Our Own" Hot Water Boilers.

TWIN ELLS



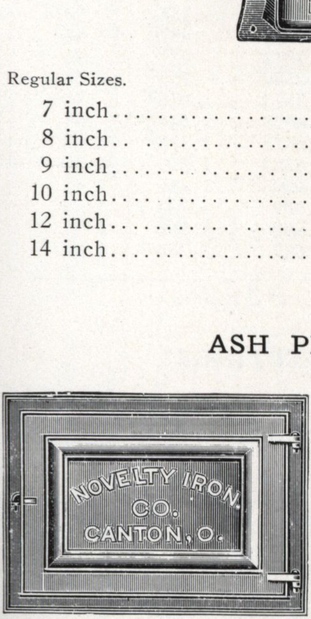
PRICE LIST

Size 1 x ¾	inches	....	$ .38
Size 1¼ x 1	inches	....	.52
Size 1½ x 1¼	inches	....	.68
Size 2 x 1½	inches	....	.90
Size 2½ x 2	inches	....	1.50
Size 3 x 2½	inches	....	2.25
Size 4 x 3	inches	....	3.75
Size 5 x 3½	inches	....	6.75
Size 5 x 4	inches	....	6.75
Size 6 x 5	inches	....	9.75

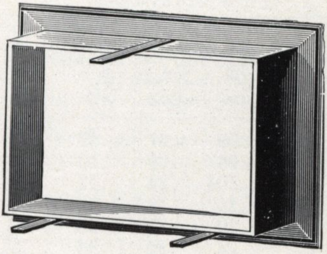
CHECK DAMPER DOOR

Regular Sizes.	Per doz.
7 inch	$6.00
8 inch	6.50
9 inch	7.00
10 inch	8.00
12 inch	9.00
14 inch	10.00

ASH PIT DOORS



Front View.



Back View.

12 x 15 opening	Per doz. $30.00
9 x 12	24.00
7½ x 10	18.00

WROUGHT IRON PIPE

Size of Pipe Inches	Weight per Ft. Lbs.	Length per Ft. of Surface Ft.	Gallons per Ft. in Length Galls.	Sq. Ft. S'rf'ce in 1 Ft. Pipe	List Price per Foot
½	.837	4.502	.0102	.221	.08½
¾	1.126	3.637	.0230	.274	.11½
1	1.67	2.903	.0408	.344	.16½
1¼	2.258	2.301	.0638	.434	.22½
1½	2.694	2.01	.0918	.497	.27
2	3.667	1.611	.1632	.621	.36
2½	5.773	1.328	.2550	.752	.57½
3	7.547	1.091	.3673	.916	.75½
3½	9.055	.955	.4998	1.044	.95
4	10.728	.849	.6528	1.178	1.08
4½	12.492	.765	.8263	1.309	1.30
5	14.564	.629	1.020	1.456	1.45
6	18.767	.577	1.469	1.733	1.88
7	23 271	.505	1.999	1.996	2.35
8	28.189	.444	2.611	2.256	2.82

CAST IRON FITTINGS

Size of Pipe In.	Elbows R. H.	Elbows R. & L. & L. H.	Elbows 45°	Elbows Reduc'g	Tees	Tees Reduc'g	Crosses	Bushings	Plugs
½	.06	.07	.07	.07	.09	.10	.16	.04	.02
¾	.08	.09	.10	.09	.12	.14	.22	.05	.03
1	.10½	.12	.12	.12	.15	.17	.27	.06	.04
1¼	.16	.18	.19	.18	.23	.27	.42	.07	.05
1½	.20	.23	.24	.23	.29	.33	.53	.09	.07
2	.28	.32	.34	.32	.41	.47	.75	.14	.10
2½	.50	.60	.60	.60	.73	.83	1.30	.21	.18
3	.75	.85	.90	.85	1.10	1.25	2.00	.30	.25
3½	1.05	1.20	1.25	1.20	1.50	1.75	2.70	.40	.38
4	1.20	1.50	1.45	1.40	1.75	2 00	3.15	.50	.42
4½	1.75	......	2.20	......	2.55	2.95	......	.75	.65
5	2.00	2.40	2.50	2.30	3.00	3.50	5.50	.93	.88
6	2.75	3.40	3.45	3.15	4.00	4.60	7.25	1.25	1.20
7	4.70	......	5.90	......	6.80	7.80	......	1.87	1.85
8	6.75	......	8.50	7.75	9.75	11.25	17.50	2.75	2.75

Wrought Iron Nipples. Threaded Right Hand.

Length in Inches.						Sizes	Prices		Price of Extra Long Nipples.								
									Length in Inches.								
Close	Short	Long					Close or Short	Long	4	5	6	7	8	9	10	11	12
¾	1½	2	2½	3	3½	⅛	.04	.06	.07	.08	.10	.12	.14	.15	.17	.18	.19
⅞	1½	2	2½	3	3½	¼	.04	.06	.07	.08	.10	.12	.14	.15	.17	.18	.19
1	1½	2	2½	3	3½	⅜	.04	.06	.07	.08	.10	.12	.14	.15	.17	.18	.19
1⅛	1½	2	2½	3	3½	½	.05	.07	.08	.10	.12	.14	.16	.18	.20	.22	.23
1⅜	2	2½	3	3½	4	¾	.06	.09	----	.11	.13	.17	.18	.20	.22	.24	.26
1½	2	2½	3	3½	4	1	.08	.13	----	.15	.18	.23	.25	.28	.31	.34	.36
1⅝	2½	3	3½	4	4½	1¼	.11	.17	----	.20	.24	.29	.33	.36	.40	.44	.47
1¾	2½	3	3½	4	4½	1½	.13	.20	----	.25	.29	.36	.40	.45	.50	.54	.59
2	2½	3	3½	4	4½	2	.18	.27	----	.32	.38	.50	.54	.59	.65	.72	.77
2½	3	3½	4	4½	5	2½	.39	.59	----	----	.68	.90	.97	1.06	1.17	1.26	1.35
2½	3	3½	4	4½	5	3	.48	.72	----	----	.85	1.08	1.20	1.33	1.45	1.58	1.70
2¾	4	4½	5	5½	6	3½	.75	1.05	----	----	----	1.30	1.45	1.60	1.75	1.90	2.05
3	4	4½	5	5½	6	4	.85	1.20	----	----	----	1.52	1.69	1.87	2.05	2.22	2.40
3	4	4½	5	5½	6	4½	1.25	1.70	----	----	----	2.25	2.50	2.75	2.95	3.17	3.40
3½	4½	5	5½	6	6½	5	1.55	2.45	----	----	----	2.58	2.83	3.10	3.35	3.60	3.85
3½	4½	5	5½	6	6½	6	1.85	2.90	----	----	----	3.05	3.35	3.70	4.00	4.30	4.65
4	5	6	---	---	---	7	3.20	3.60	----	----	----	4.05	4.45	4.90	5.30	5.75	6.15
4	5	6	---	---	---	8	3.55	4.05	----	----	----	4.55	5.05	5.50	6.00	6.50	7.00
5	6	8	---	---	---	9	5.25	6.50	----	----	----	----	----	7.10	7.75	8.40	9.00
5	6	8	---	---	---	10	6.75	8.25	----	----	----	----	----	8.90	9.70	10.40	11.15
----	----	---	---	---	---	11	------	----	----	----	----	----	----	----	----	----	----
5	6	8	---	---	---	12	8.00	10.00	----	----	----	----	----	10.80	11.75	12.70	13.65

SIZE OF CHIMNEY

Required for boiler carrying different amounts of radiation in square feet.

Hot Water	Steam	Size of Chimney
450	300	8x 8
550	350	8x12
650	450	8x12
1000	600	12x12
2000	1200	12x12
3000	1600	12x16
4500	2300	16x16
6000	4000	16x20

All chimneys above 12 x 16 should be 50 feet high or over, if not, a larger size will be necessary.

Approximate Area of Pipes and Their Equivalents.

Main	Branches
1 in. will supply.............	2 ¾-in.
1¼ in. will supply.............	2 1-in.
1½ in. will supply.............	2 1¼-in.
2 in. will supply.............	2 1½-in.
2½ in. will supply.............	2 1½-in. and 1 1¼-in., or 1 2-in. and 1 1¼-in.
3 in. will supply.............	1 2½-in. and 1 2-in., or 2 2-in. and 1 1½-in.
3½ in. will supply.............	2 2½-in., or 1 3-in. and 1 2-in. or 3 2-in.
4 in. will supply.............	1 3½-in. and 1 2½-in., or 2 3-in., or 4 2-in.
4½ in. will supply.............	1 3½-in., 1 3-in., or 1 4-in. and 1 2½-in.
5 in. will supply.............	1 4-in. and 1 3-in., or 1 4½-in. and 1 2½-in.
6 in. will supply.............	2 4-in. and 1 3-in., or 4 3-in., or 10 2-in.
7 in. will supply.............	1 6-in. and 1 4-in., or 3 4-in. and 1 2-in.
8 in. will supply.............	2 6-in. and 1 5-in., or 5 4-in. and 2 2-in.

TO REMOVE OIL AND GRIT FROM STEAM BOILERS

On account of an unavoidable accumulation of oil, grit or grease in a new system, it causes a boiler to foam, prevents generation of steam, and produces an unsteady water line, and it therefore becomes necessary to blow off the boiler while under pressure.

To do this, first close off the main steam and return valves, or all radiator valves, then make a wood fire and get up at least ten pounds pressure as indicated on the steam gauge, after which open the blow-off valves, being careful that just sufficient fire is carried to hold the pressure until the last gallon of water is exhausted, and then allow the fire to die out.

Open all fire and flue doors, and in about thirty minutes close blow-off valve, and refill boiler very slowly to water line. Open all radiator and main valves, then start fire.

After a boiler has been installed and in operation it should be blown off within a week, and should one blowing not be sufficient to result in a clean gauge glass, proper generation of steam, and a steady water line, it should be blown off repeatedly until that condition is obtained.

Table Showing Expansion of Wrought Iron Pipe.

Initial Temperature	Increase in length per 100 feet when heated to									
	160°	180°	200°	212°	228°	240°	250°	259°	267°	274°
Zero. in.	1.28	1.44	1.60	1.69	1.82	1.92	2.00	2.07	2.13	2.20
32° in.	1.02	1.18	1.34	1.43	1.56	1.66	1.74	1.81	1.87	1.94
64° in.	.77	.93	1.09	1.18	1.31	1.41	1.49	1.56	1.61	1.69
Hot Water				Water Boils	5 lbs.	10 lbs.	15 lbs.	20 lbs.	25 lbs.	30 lbs.

Wrought iron pipe expands, in inches, per 100 feet, 4-5 of the increase in temperature of steam or water it is subjected to, over the temperature at the time of installation, divided by 100.

Example—Temperature when installed, 32°, 10 lbs. pressure =240°, difference 208°, 4-5 of which equals 1 66-100 inches expansion per 100 feet.

STANDARD PRICE LIST OF DIRECT RADIATION

Height in Inches	45	44	39	38	37	35	33	32	31	30	28	27	
List per sq. ft. of heating surface	41	41	42	42	42	44	46	46	46	46	48	50	

Height in inches	26	25	24	23	22	21	20	19	18	16	15	14	13
List per sq. ft. of Heating surface	50	50	50	53	53	57	57	57	58	60	62	64	66

Add to Prices Quoted for Direct Radiators

Circular Radiators, Water	92 cts. per section
Circular Radiators, Steam	58 cts. per section
Curved Radiators, Water	92 cts per section
Curved Radiators, Steam	58 cts. per section
Window Radiators, Steam	16 cts. per section
Window Radiators, Water	32 cts. per section
Stairway Radiators, Steam	34 cts. per section
Stairway Radiators, Water	60 cts. per section
Corner Radiators, Steam	$3.80 per corner
Corner Radiators, Water	4.75 per corner

Radiators ordered with legs which are lower than regular heights listed, an extra charge will be made of 53 cents for each leg section.

TABLE OF AREA OF CIRCLES

Diam.	Area.	Diam.	Area.	Diam.	Area.
⅛	0.0123	21	346.3606	61	2922.4665
¼	0.0491	22	380.1327	62	3019.0705
⅜	0.1104	23	415.4756	63	3117.2453
½	0.1963	24	452.3893	64	3216.9909
⅝	0.3067	25	490.8789	65	3318.3072
¾	0.4417	26	530.9292	66	3421.1944
⅞	0.6013	27	572.5552	67	3525.6524
1	0.7854	28	615.7522	68	3631.6811
⅛	0.9940	29	660.5199	69	3739.2807
¼	1.227	30	706.8583	70	3848.4510
⅜	1.484	31	754.7676	71	3959.1921
½	1.767	32	804.2477	72	4071.5041
⅝	2.073	33	855.2986	73	4185.3868
¾	2.405	34	907.9203	74	4300.8403
⅞	2.761	35	962.1128	75	4417.8647
2	3.141	36	1017.8760	76	4536.4598
¼	3.976	37	1075.2101	77	4656.6257
½	4.908	38	1134.1149	78	4778.3624
¾	5.939	39	1194.5906	79	4901.6699
3	7.068	40	1256.6370	80	5026.5482
¼	8.295	41	1320.2643	81	5152.9974
½	9.621	42	1385.4424	82	5281.0173
¾	11.044	43	1452.2012	83	5410.6079
4	12.566	44	1520.5308	84	5541.7694
½	15.904	45	1590.4213	85	5674.5017
5	19.6350	46	1661.9025	86	5808.8048
6	28.2743	47	1734.9445	87	5944.6787
7	38.4846	48	1809.5574	88	6082.1234
8	50.2655	49	1885.7410	89	6221.1389
9	63.6173	50	1963.4954	90	6361.7251
10	78.5398	51	2042.8206	91	6503.8822
11	95.0332	52	2123.7166	92	6647.6101
12	113.0973	53	2206.1834	93	6792.9087
13	132.7323	54	2290.2210	94	6939.7782
14	153.9380	55	2375.8294	95	7088.2184
15	176.7146	56	2463.0086	96	7238.2295
16	201.0619	57	2551.7586	97	7389.8113
17	226.9801	58	2642.0794	98	7542.9640
18	254.4690	59	2733 9710	99	7697.6874
19	283.5287	60	2827.4334	100	7853.9816
20	314.1593				

TABLE OF PRESSURE DUE TO HEIGHT

Feet Head	Eq. Pressure per Sq. Inch	Feet Head	Eq. Pressure Per Sq. Inch	Feet Head	Eq. Pressure per Sq. Inch
1	0.34	35	15.16	70	30.32
5	2.16	40	17.32	75	32.48
10	4.33	45	19.49	80	34.65
15	6.49	50	21.65	85	36.82
20	8.66	55	23.82	90	38.98
25	10.82	60	25.99	95	41.15
30	12.99	65	28.15	100	43.31

TABLE OF TEMPERATURE DUE TO PRESSURE

Lbs. Pressure	Degrees	Lbs. Pressure	Degrees	Lbs. Pressure	Degrees
0	212	10	240	60	307
1	215	15	250	65	312
2	219	20	259	70	316
3	222	25	267	75	320
4	224	30	274	80	324
5	227	35	281	85	328
6	230	40	286	90	331
7	232	45	292	95	334
8	235	50	298	100	338
9	238	55	303		

HOW TO PROPORTION RADIATION

For Low Pressure Gravity Return Steam Heating System.

In order to have the building properly heated, the most careful judgment must be exercised on the part of the engineer, and all the conditions should be most carefully studied to provide for different exposures, poorly constructed buildings and rooms containing an extra amount of glass surface.

The following ratios will be generally found safe and reliable:

DWELLINGS.	1 Sq. Ft. of Direct Radiation will heat
Living rooms, 3 sides exposed	40 cubic feet
Living rooms, 2 sides exposed	50 cubic feet
Living rooms, 1 side exposed	60 cubic feet
Bath rooms	40 cubic feet
Halls in center of house	70 cubic feet
Halls in corner of house	55 cubic feet
Sleeping rooms	60 to 70 cubic feet
PUBLIC BUILDINGS.	
School rooms	60 to 80 cubic feet
Churches and auditoriums	75 to 125 cubic feet
Stores and offices	60 to 100 cubic feet
Theatres	200 to 300 cubic feet

Rooms on the north require about 10 per cent more radiation than rooms on the south side. If building is poorly constructed, extra radiation and boiler power will be required. If indirect radiation is used, add 50 per cent. If semi-direct or direct-indirect are used, add 25 per cent to figures for direct radiation.

Steam radiators should be tapped as follows:

ONE PIPE WORK.		TWO PIPE WORK.	
1 to 25 feet,	1 inch.	1 to 48 feet,	1 x ¾ inch.
25 to 50 feet,	1¼ inch.	48 to 72 feet,	1¼x1 inch.
50 to 90 feet,	1½ inch.	72 to 120 feet,	1½x1¼ inch.
90 to 150 feet,	2 inch.	120 to 160 feet,	2 x1½ inch.

INDIRECT RADIATORS.

25 to 50 feet,	1¼x1 inch.
50 to 100 feet,	1½x1¼ inch.
100 to 150 feet,	2 x1½ inch.

The main should always rise from the boiler to a point as close to the ceiling as possible, in order that it may have good fall in the direction the steam is going without extreme end falling lower than 18 inches above the water line. Be sure that all pipes are of ample size, as too large pipes never spoiled a job. Never use less than 1½-inch pipe horizontally or for riser to second floor.

If main is reduced, use eccentric fittings, or avoid in some way forming a pocket in which the water can find lodgment.

It is well to place an automatic air valve at the end of the main where it drops below the water line, to prevent the water from syphoning into the main from the return.

If globe valves are used, be sure to turn them on the side in order that they may clear of water. Be careful that the pipes have plenty of room for expansion to avoid breaking of joints, or starting leaks. It is always best to cover mains and boiler to prevent rapid condensation of the steam before it reaches the radiation to be heated. Always use good adjustable expansion pipe hangers.

Having determined the amount of radiation, select a boiler of ample capacity to carry the radiation and mains, allowing if possible, a reserve of at least 25 per cent, as a large boiler can be operated with much less attention, and greater economy of fuel.

If valve is used on the steam main at the boiler it should be placed at the highest point so that the water of condensation will drain each way, and not find lodgment at the valve.

Flue for Steam Boiler. Never connect a boiler to a flue having less than 8 x 8 inch inside dimensions. A chimney flue should have an area of from 25 to 30 square inches for every square foot of grate surface. See table on page 100.

HOW TO PROPORTION RADIATION

For Hot Water Heating System.

In proportioning radiation for Hot Water Heating no set rule can be given which will be applicable in all cases, and to proportion it so that each room will have the required temperature at the same time calls for the best judgment of the engineer, on whose experience must largely depend the correct solution of the problem. Having full data at hand as to sizes of rooms, different exposures, glass surface, and regarding the construction of building, the amount of surface can be determined by the use of the following rates, which have generally proved safe:

DWELLINGS.	1 Sq. Ft. of Direct Radiation will heat
Living rooms, 3 sides exposed	25 cubic feet
Living rooms, 2 sides exposed	28 cubic feet
Living rooms, 1 side exposed	30 cubic feet
Halls in center of house	35 cubic feet
Halls in corner of house	30 cubic feet
Bath rooms	20 to 30 cubic feet
Sleeping rooms	30 to 40 cubic feet
PUBLIC BUILDINGS.	
School rooms and offices	30 to 50 cubic feet
Stores and factories	40 to 70 cubic feet
Auditoriums and churches	80 to 100 cubic feet

The above ratios are based on zero weather, if extreme is above zero, less can be used, and if below, the radiation should be increased.

If indirect radiators are used, add at least 50 per cent, and if semi-direct, or direct-indirect are used, add not less than 25 per cent to the amount of radiation as figured above. Exposed or isolated rooms, especially if they are at a distance from the boiler, will require extra radiation, allowance should be made for poorly constructed buildings, also for loose doors and windows and outside doors leading directly into the rooms to be heated.

Also look after the chimney, and see that it is of proper size and that no other stoves or grates are connected with it. (Table on page 100 can be used as a guide for size of chimney flue.)

After you have determined the amount of radiation to be used, select a boiler large enough to do the work easily, as so much depends on draft and other things, it is always well to be on the safe side, and a boiler which is a little too large can be run with more economy than one which is too small and has to be forced to obtain the required results.

Be sure and give the flow and return pipes a pitch up from the boiler to the radiators (1 inch in 10 feet is good practice). Take branches from top of main and do not reduce size of main too soon, as the friction is sometimes equal to a reduction in size of pipe.

Table showing sizes of pipe to feed different size direct radiators:

FIRST FLOOR.

Up to 45 sq. ft., 1 in.
45 to 90 sq. ft., 1¼ in.
90 to 140 sq. ft., 1½ in.
140 sq. ft. and over, 2 in.

SECOND FLOOR.

Up to 25 sq. ft., ¾ in.
25 to 70 sq. ft., 1 in.
70 to 120 sq. ft., 1¼ in.
120 sq. ft. and over, 1½ in.

INDIRECT RADIATION.

Up to 40 sq. ft., 1 in.
40 to 80 sq. ft., 1¼ in.
80 to 125 sq. ft., 1½ in.
125 sq. ft. and over, 2 in.

SIZES OF PIPES

For quick reference and practical use the following tables will be found safe under ordinary conditions. For indirect work the area of pipes should be increased about one hundred per cent.

Sizes of Steam Mains

Direct Radiation Square Feet	One-Pipe Work Inches	Two-Pipe Work Inches
125	1½	1¼x1
250	2	1½x1¼
400	2½	2 x1½
650	3	2½x2
900	3½	3 x2½
1200	4	3½x3
1600	4½	4 x3½
2000	5	4½x4
2500	6	5 x4½
3500	7	6 x5
5000	8	7 x6
6500	9	8 x6
8000	10	9 x6

Sizes of Hot Water Mains

Direct Radiation Square Feet	Pipe, Inches
75 to 125	1¼
125 to 200	1½
200 to 300	2
300 to 400	2½
400 to 700	3
700 to 950	3½
950 to 1200	4
1200 to 1500	4½
1500 to 1900	5
1900 to 2300	5½
2300 to 2800	6

Application of Table.

To provide for 2,500 square feet of radiation at the boiler, we find by the tables that it would require a 6-inch pipe. At 10 feet from the boiler we take off two branches, one to supply 1,500 and the other 1,000. We find by the table that one would have to be 4½ inches and the other 4 inches; the 4½-inch pipe is run 6 feet and a riser taken off to feed 300 feet; this would leave 1,200. We find by the table that 1,200 square feet at 16 feet from the boiler would require a 4-inch main. We continue this main 6 feet and take off a branch to feed 200 square feet, leaving 1,000 feet, and find that at 22 feet from the boiler it would require a 4-inch main to carry 1,000 feet. We continue the main 8 feet and take off branch to carry 400 feet, leaving 600 feet, and find that at 30 feet from the boiler it would require a 3½-inch pipe to carry 600 feet. Continue in the same manner until all the branches are provided for, then proportion the size of branches in the same manner, always being sure that the pipe is large enough, especially where it is farthest from the boiler. It is often well to make the horizontal pipe feeding a riser one size larger than the riser, but this is not always necessary.

In running risers, always give the lower floors the advantage, as the natural tendency is for the water to flow to the highest radiators.

The friction in an elbow in a hot water apparatus after leaving the first turn at the heater is equal to the friction in 15 feet of pipe, and should be so considered.

INDIRECT HEATING

In setting indirect radiation be sure that there is a space at top of radiator equal to the area of warm air pipe, and a space of 10 or 12 inches at the bottom, to allow the air to circulate freely to all parts of the radiator.

Be sure that the warm air pipe is connected directly with the top of box and cold air pipe at bottom.

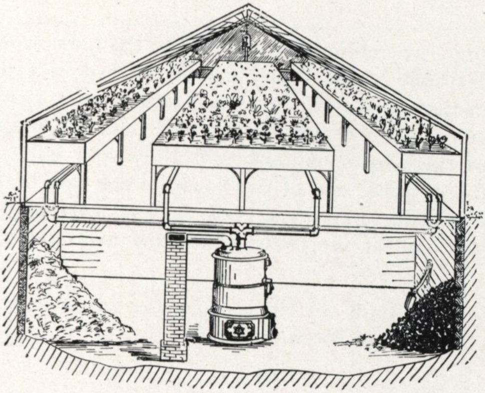
A valve is not necessary on indirect radiators, as the amount of heat can be regulated by register.

Where cast iron pipe radiators are used, allow 25 to 30 per cent more surface than where pipe coils are used. A thermometer may be placed on the boiler to indicate the temperature of the water and an altitude gauge to indicate the height of the water in the expansion tank; these are convenient, but not always necessary.

SIZE FLUES FOR INDIRECT WORK

Feet of Heating Surface Sq. Feet Water	Area Cold Air Supply Square Inches	Area Hot Air Flue Square Inches	Size of Register Inches
26	36	48	8x12
52	54	72	9x12
78	72	96	10x14
104	90	120	12x15
130	108	144	12x19
156	126	168	14x22
182	144	192	14x24
208	162	216	16x20
234	180	240	16x24
260	198	264	20x20
286	216	288	20x24
312	234	312	20x24

GREENHOUSE HEATING



To determine the amount of radiation required to keep a greenhouse to the required temperature, we have to deal with exposed surface entirely. The rule most generally used is to find the amount of glass surface, and to this add 1 square foot for every 4½ square feet of wall surface and divide by the following factors;

For Steam.

8 to maintain a temperature of 45 degrees.
7 to maintain a temperature of 50 degrees.
6½ to maintain a temperature of 55 degrees.
6 to maintain a temperature of 60 degrees.
5 to maintain a temperature of 65 degrees.
4½ to maintain a temperature of 70 degrees.

For Hot Water.

5 to maintain a temperature of 45 degrees.
4½ to maintain a temperature of 50 degrees.
4 to maintain a temperature of 55 degrees.
3½ to maintain a temperature of 60 degrees.
3¼ to maintain a temperature of 65 degrees.
3 to maintain a temperature of 70 degrees.

In piping a greenhouse for hot water, the open tank system is most desirable if the boiler can be placed in a pit lower than the radiation; if not, the closed tank system is necessary and the main should rise from the heater as high as the location of the expansion tank will allow and fall from that point to the extreme end of the house at the rate of 1 inch to 10 feet, then drop to feed the coils, or lines of pipe under the benches, and collect the returns into one main and return to the boiler.

If the closed tank system is used, the safety valve should be set to blow off at 20 pounds.

Rule for Proportioning Radiating Surface to Glass Surface.

Divide the difference in temperature between that at which the room is to be kept and the coldest outside atmosphere, by the difference between the temperature of the Radiating Surface and that at which the room is to be kept. The result will be the square feet of plate or pipe surface to each square foot of glass, or its equivalent in wall surface.

The heating surface found by this rule does not provide for cold air entering by reason of loosely fitting doors or windows, and proper allowance must be made for this. A general rule is to add 25 per cent for buildings of ordinary construction, but some are so poorly constructed that 50 per cent or more must be added to offset air leakages. Ample allowance must be made for rooms exposed to cold winds. About 10 square feet of wall surface is generally estimated as equal to 1 square foot of glass, in cooling power.

DATA REQUIRED FOR ESTIMATE

Name of Room	Aspect	Size of Room			Cubic Contents	Sq. Ft. Exp. Class	Sq. Ft. Exp. Wall	Do not fill this space					
		Long	Wide	High				Direct	Indirect	No.	Style	High	Tapped

Steam or Water?............ Owner of Building?.........

Date ....19... Address.....................

For......................... Architect...................

Bus. Address................ Address.....................

Kind of Building.......................................

Location.................... Kind of fuel used...........

Nearest Freight Station..... Ship by.....................

Height of Cellar............ Size of Smoke Flue...x...in.

Temperature Living Rooms.. Halls and Chambers.........

ITEMS TO ESTIMATE ON

For...
....

STEAM OR WATER.

No..........."Our Own" Series..........Boiler.............
Sq. Ft. Direct Radiation @....................................
Sq. Ft. Indirect Radiation @..................................
Extra for Low Radiation.......................................
Pipe and Fittings...
¾ In. Radiator Valves...
1 In. Radiator Valves...
1¼ In. Radiator Valves..
1½ In. Radiator Valves..
2 In. Radiator Valves...
¾ In. Union Elbows..
1 In. Union Elbows..
1¼ In. Union Elbows...
1½ In. Union Elbows...
2 In. Union Elbows..
Air Valves..
Floor and Ceiling Plates......................................
Radiator Boards ....
Hangers...
Lbs. Bronze....Qts. Bronze Liquid......Bronzing..........
Expansion Tank, Complete......................................
Feed and Draw Off Cocks.......................................
Smoke Pipe..
Altitude Gauge..
Thermometer...
Pipe Covering...
Cold Air Ducts, Stack Boxes and Registers.....................
Freight and Cartage...
Car Fares and Board...
Days' Labor (Man and Helper)..................................
Incidentals...
Submitted by.................Net Cost.........................
.........................Profit...............................
.........................Bid..................................
Date..

TELEGRAPH CODE

In writing a cipher message, please observe the following: First—Begin every cipher word with a capital letter. Second—Whenever a blank occurs in a sentence, the word or words supplying such blank must immediately follow the cipher word of the sentence.

Quotations and Correspondence

	Cipher Word
At what price and how soon can you furnish	**Sable**
Get ready for immediate shipment	**Satire**
We quote for immediate acceptance	**Scatter**
Can ship in or about......from receipt of order	**Scion**
Impossible to ship earlier than	**Scorn**
Shipment is being hurried as much as possible	**Scotch**
Will ship at once with Draft and Bill of Lading attached	**Scrape**
Quote best price on	**Sand**
Quote best price on.....square feet of.....height of........Radiators	**Safe**
Wire reply quick	**Sabre**
Will wire you tomorrow morning	**Sabian**
Have written	**Sachel**
Answer by first mail	**Sardonic**
See our letter of......giving full particulars	**Satanic**
Have received no reply from you to our letter of	**Sacred**
Referring to your letter of	**Sad**
Referring to our letter of	**Saddle**
Referring to your telegram of	**Sabbath**
Referring to our telegram	**Safety**
Inclosure mentioned in your letter of.........not received, mail same at once	**Sage**
F. O. B. factory less the carload rate of freight to	**Salad**
F. O. B. factory less carload rate of freight when not exceeding fifteen cents per hundred lbs	**Scenery**
What is the carload freight rate to	**Sally**
What is the less carload freight rate to	**Salmon**
Best rate of freight quoted on carload is	**Salt**
Freight rate quoted on less than carload is	**Salve**
Will wire you freight rate as soon as received	**Sambo**
Change routing to read as follows	**Sample**
Ship immediately	**Sand**
Ship by freight	**Saturn**
Ship by quickest route	**Saw**
Ship by express	**Saturate**
Ship by express prepaid	**Scald**
Ship immediately and follow with tracer	**Scant**
Ship with draft and bill of lading attached	**Savage**

	Cipher Word
Send bill of lading covering our order	**Scarce**
Enter order as per our inquiry of	**Saint**
Enter order at your quotation of	**Scheme**
Will send shipping instructions by mail	**Scenic**
Shipping instructions for our order (No. or date)	**School**
Ship what you can immediately	**Saunter**
Do not hold for other orders, rush through	**Saving**
Send by local freight unless car moves at once	**Scoop**
When can you make shipment	**Sanity**
When will order (No. or date) be shipped	**Scabbard**
When and by what route did you ship our order	**Scalp**
Send tracer after order (No. or date)	**Savor**
Trace by wire our order (No. or date)	**Score**
Include in our order (No. or date)	**Scour**
You may substitute on our order (No. or date)	**Scout**
Omit......from our order (No. or date)	**Scramble**
Hold for further instructions our order (No. or date)	**Saxon**
Duplicate our order (No. or date)	**Scarlet**
Can ship immediately	**Scorch**
Anticipate making shipment	**Scrap**
Your order (No. or date) was shipped	**Scratch**
Order (No. or date) has not yet been shipped	**Scream**
Advise by wire earliest shipping date	**Screech**
Kindly reply at once to our telegram	**Scar**
Can ship complete your order (No. or date)...... immediately except........Shall we make such shipment	**Scribble**
Make shipment of our order (No. or date) without waiting for	**Scribe**
Your order (No. or date) does not specify	**Scrub**
Change our order (No. or date) to read	**Secret**
Referring to your order (No. or date)	**Secure**
Referring to our order (No. or date)	**Seed**
Do not find any order from you (No. or date)	**Senior**

TELEGRAPH CODE

RADIATORS

	Cipher Word
Emerald 2 Column Water	**Tan**
Emerald 3 Column Water	**Throne**
Emerald 4 Column Water	**Talc**
Emerald 3 Column Direct-Indirect Water	**Tally**
Cast Iron Wall Coil, 7 ft., Sec. Water	**Tame**
Cast Iron Wall Coil, 6 ft., Sec. Water	**Tamp**
Cast Iron Wall Coil, 5 ft., Sec. Water	**Tang**
Cast Iron Wall Coil, 9 ft., Sec. Water	**Tansy**
Emerald 2 Column Steam	**Tangent**
Emerald 3 Column Steam	**Thrust**
Emerald 4 Column Steam	**Talcum**
Emerald 3 Column Direct-Indirect Steam	**Tallyho**
Cast Iron Wall Coil, 7 ft., Sec. Steam	**Tamper**
Cast Iron Wall Coil, 6 ft. Sec. Steam	**Tandem**
Cast Iron Wall Coil, 5 ft., Sec. Steam	**Tangible**
Cast Iron Wall Coil, 9 ft., Sec. Steam	**Tangle**

Heights

	Cipher Word		Cipher Word
14 inch high	**Habitually**	32 inch high	**Hairy**
16 inch high	**Hackle**	38 inch high	**Halt**
20 inch high	**Hag**	44 inch high	**Handy**
26 inch high	**Hailing**	45 inch high	**Hardy**

Number of Sections

	Cipher Word		Cipher Word
2 Sections	**Ugly**	19 Sections	**Vacant**
3 Sections	**Ulcer**	20 Sections	**Wagon**
4 Sections	**Umber**	21 Sections	**Wage**
5 Sections	**Umpire**	22 Sections	**Wager**
6 Sections	**Uncut**	23 Sections	**Wail**
7 Sections	**Under**	24 Sections	**Waste**
8 Sections	**Unison**	25 Sections	**Waif**
9 Sections	**Unpin**	26 Sections	**Wait**
10 Sections	**Valet**	27 Sections	**Wake**
11 Sections	**Vain**	28 Sections	**Walnut**
12 Sections	**Valise**	29 Sections	**Waltz**
13 Sections	**Value**	30 Sections	**Yam**
14 Sections	**Vamp**	31 Sections	**Year**
15 Sections	**Van**	32 Sections	**Yell**
16 Sections	**Vanish**	33 Sections	**Yield**
17 Sections	**Vanity**	34 Sections	**Yoke**
18 Sections	**Vapor**	35 Sections	**Young**

	Cipher Word
Loop	**Zeal**
Supply Steam Leg Section for single pipe	**Zebra**
Supply Steam Leg Section for double pipe	**Zenith**
Supply Hot Water Leg Section	**Zero**
Blank Leg Section, Steam	**Zest**
Return Steam Leg Section	**Zinc**
Return Hot Water Leg Section	**Zion**
Intermediate Steam Section	**Zone**
Intermediate Hot Water Section	**Zeta**
Middle Steam Leg Section	**Zebu**
Intermediate Hot Water Leg Section	**Zodiac**
Blank Leg Section	**Zealous**
Center Leg Section	**Zephr**
Drip Leg Section	**Zoology**

TELEGRAPH CODE

HOT WATER HEATERS

SERIES "B"

Number	Cipher Word
15	Beach
16	Beacon
20	Beadle
21	Beak
30	Beam
31	Beard
40	Beaver
41	Begin

SERIES "C"

Number	Cipher Word
101	Cabin
102	Cable
103	Cackle
104	Cactus

SERIES "D"

Number	Cipher Word
33	Deacon
34	Deaden
35	Dealer
36	Debate
44	Debtor
45	Decade
46	Decamp
54	Decay
55	Decent
56	Decide
57	Decline
64	Deprive
65	Deduce
66	Default
67	Defect
74	Defense
75	Defer
76	Defray
77	Deject
84	Delay
85	Delight
86	Delude
87	Demur

SERIES "E"

Number	Cipher Word
3606	Enamel
3607	Encamp
3608	Encore
3609	Endorse
3610	Enforce
3611	Engage
3612	Engine

"COURTLAND"

Number	Cipher Word
4805	Invent
4806	Intense
4807	Insert
4808	Inspect
4809	Intact
4810	Inflame

SERIES "F"

Number	Cipher Word
130	Facade
131	Faction
140	Fagot
141	Fairy
150	Falcon
151	Family
160	Famous
161	Farmer

18-INCH SERIES "G"

Number	Cipher Word
185	Gable
186	Gaelic
187	Gaffer
188	Gaiter

24-INCH SERIES "G"

Number	Cipher Word
245	Gallon
246	Galley
247	Gamble
248	Gamin
249	Gander
250	Garden

"RIVAL"

Number	Cipher Word
192	Ribald
193	Ribbed
194	Rick
222	Rib
223	Ribbon
224	Rich
252	Rice
253	Rid
254	Riddle
282	Rider
283	Ridge
284	Ridicule
312	Rifle
313	Rig
314	Right
342	Rigid
343	Rigor
344	Rigging

"ROMAN"

Number	Cipher Word
533	Rover
534	Role
535	Royal
536	Romance
544	Road
545	Roam
546	Roar
554	Roast
555	Robust
556	Rock
557	Rocker
564	Rocky
565	Rodent
566	Roe
567	Rogue
574	Roller
575	Rollic
576	Romish
577	Romp

TELEGRAPH CODE

STEAM BOILERS

SERIES "M"

Number	Cipher Word
17	Mind
22	Menial
32	Mental
42	Mentor

SERIES "N"

201	Natal
202	Native
203	Nature
204	Natural

SERIES "P"

636	Perch
736	Perfect
836	Perforate
936	Perforce
1036	Perform
1136	Period
1236	Permit

"RIVAL"

1920	Rim
1930	Ringlet
1940	Rippling
2220	Rink
2230	Rinse
2240	Riot
2520	Ripe
2530	Ripen
2540	Ripple
2820	Risk
2830	River
2840	Rivet
3120	Risky
3130	Rift
3140	Ritual
3420	Riplet
3430	Rind
3440	Ring

SERIES "Q"

132	Quality
142	Quarry
152	Quarter
162	Query

"COURTLAND"

548	Joy
648	Jewel
748	Joist
848	Jar
948	Journal
1048	Juniper

18-INCH SERIES "R"

Number	Cipher Word
1850	Recruit
1860	Rectify
1870	Redeem
1880	Redress

24-INCH SERIES "R"

2450	Reduce
2460	Refine
2470	Reflect
2480	Refoam
2490	Refract
2500	Refresh

"HESPER"

300	Habit
301	Hack
400	Hail
401	Hallow
402	Hand
500	Hardy
501	Haste
502	Head
600	Helm
601	Hero
602	High
701	Hint
702	Horn
703	Hull
801	Hymn
802	Harmony
803	Hammer

"ROMAN"

330	Rosette
340	Roulette
350	Roll
430	Roof
440	Room
450	Roost
530	Root
540	Rope
550	Rose
630	Rosin
640	Rotate
650	Rotund
740	Rough
750	Round
760	Rostrum

TELEGRAPH CODE

(CONTINUED)

TANK HEATERS AND LAUNDRY STOVES

SERIES "A" TANK HEATERS

Number	Cipher Word
9	Atom
10	Atlas
12	Atone
14	Attach
14½	Attain
14¾	Attest

CHICAGO LAUNDRY STOVES

Number	Cipher Word
10	Atman

SPECIAL LAUNDRY STOVES

Number	Cipher Word
10	Attend
12	Attract

STARK

Number	Cipher Word
107	Sane
108	Sail
109	Sack
110	Scrip

FLANNER SAFETY FIRE BOX BOILERS

HOT WATER

Number	Cipher Word
1	Kaiser
2	Katy
3	Keen
4	Keep
5	Keg
6	Kennel
7	Kernel
8	Kettle
9	Key
10	Keystone
11	Kick
12	Kid
13	Kill
14	Kind
15	King
16	Kirk
17	Kit
18	Kitten
19	Knee
20	Knife

STEAM

Number	Cipher Word
1	Lapel
2	Labor
3	Lace
4	Lack
5	Lacrosse
6	Lad
7	Ladle
8	Ladder
9	Lady
10	Lagoon
11	Lake
12	Lamb
13	Lament
14	Lance
15	Landing
16	Landlord
17	Lane
18	Lantern
19	Lap
20	Lard

TELEGRAPH CODE

(CONTINUED)

	Cipher Word
Ashpit Doors	**Tallow**
Asbestos Cement	**Table**
Brushes, Radiator, Wire Handle	**Time**
Brushes, Radiator, Wood Handle	**Timely**
Brushes, Flue Cleaning, Fig. P	**Tiger**
Brushes, Flue Cleaning, Fig. G	**Tigress**
Brushes, Flue Cleaning, Fig. C	**Till**
Bronze, Gold, Lbs. of	**Thence**
Bronze, Aluminum, Lbs. of	**Theory**
Bronze, Liquid, ½ gallon	**Tariff**
Bronze, Liquid, gallons	**Tart**
Check Dampers	**Ticket**
Clamps, Beam	**Teach**
Diaphragm Rubber	**Thick**
Ells, Union Radiator No. 132, ½-inch	**Terror**
Ells, Union Radiator No. 132, ¾-inch	**Tense**
Ells, Union Radiator No. 132, 1-inch	**Tender**
Ells, Union Radiator No. 132, 1¼-inch	**Tennis**
Ells, Union Radiator No. 132, 1½-inch	**Type**
Ells, Union Radiator No. 132, 2-inch	**Terrace**
Floor and Ceiling Plates, Black	**Taller**
Floor and Ceiling Plates, Nickle Plated	**Temper**
Generators, Honeywell, No. 1	**Theft**
Generators, Honeywell, No. 2	**Theme**
Generators, Honeywell, No. 3	**Tabby**
Generators, Honeywell, No. 4	**Tabernackle**
Gauges, Altitude	**Terrible**
Gauges, Steam	**Terrace**
Headers, Branch	**Tenacity**
Hangers, Ball Joint	**Tavern**
Putty, Stove	**Take**
Pipe Covering, 2 Ply Woolsel	**Tab**
Pipe Covering, 3 Ply Woolsel	**True**
Pipe Covering, 4 Ply Woolsel	**Trace**
Pipe Covering, 2 Ply Asbestos Air Cell	**Treat**
Pipe Covering, 3 Ply Asbestos Air Cell	**Train**
Pipe Covering, 4 Ply Asbestos Air Cell	**Tramp**
Pipe Covering, Asbestos-Magnesia, 1 inch thick	**Tackle**
Pipe Covering, Wool Felt, ½ inch thick	**Tablet**
Pipe Covering, Wool Felt, ¾ inch thick	**Tease**
Pipe Covering, Wool Felt, 1 inch thick	**Technical**

TELEGRAPH CODE

(CONTINUED)

	Cipher Word
Regulators, Temperature, without Time Clock	Temperature
Regulators, Temperature, with Time Clock	Truant
Traps, "Nason" Steam	Tableau
Twin Ells	Templar
Thermometer, Straight	Tepid
Thermometer, Angle	Term
Tanks, Expansion, Galvanized	Territory
Tanks, Expansion, Automatic	Tether
Tanks, Storage, Black	Tactics
Tanks, Storage, Galvanized	Talent
Unions, Flange	Tannable
Valves, Unique, ½ inch	Talisman
Valves, Unique, ¾ inch	Talkative
Valves, Unique, 1 inch	Tamarack
Valves, Unique, 1¼ inch	Tamarin
Valves, No. 101 H. W. Radiator, ½ inch	Tantrum
Valves, No. 101 H. W. Radiator, ¾ inch	Tartar
Valves, No. 101 H. W. Radiator, 1 inch	Tassel
Valves, No. 101 H. W. Radiator, 1¼ inch	Tatter
Valves, No. 101 H. W. Radiator, 1½ inch	Tattle
Valves, No. 101 H. W. Radiator, 2 inch	Tattoo
Valves, No. 72 J. D Steam Radiator, ¾ inch	Team
Valves, No. 72 J. D. Steam Radiator, 1 inch	Teap
Valves, No. 72 J. D. Steam Radiator, 1¼ inch	Teasing
Valves, No. 72 J. D. Steam Radiator, 1½ inch	Teal
Valves, No. 72 J. D. Steam Radiator, 2 inch	Tea
Valves, Straightway Hot Water Radiator	Taper
Valves, Screw Stem Steam Corner Radiator, R. H.	Task
Valves, Screw Stem Steam Corner Radiator, L. H.	Tarry
Valves, Screw Stem Steam Globe Radiator	Tarpaulin
Valves, Brass Gate, Iron Wheel	Tardy
Valves, Brass Gate, Wood Wheel	Target
Valves, Improved Q. O. H. W. Radiator	Trade
Valves, Compression Radiator, Air No. 2	Tarried
Valves, Compression Radiator, Air No. 4	Tartan
Valves, Clevauc Steam Automatic, Air	Tensile
Valves, "Our Own" Steam Automatic, Air	Tacit
Valves, "Midget" Positive and Automatic Steam	Tasty
Valves, Perfected Puplex No. 1 Automatic Steam	Tatter
Valves, Ball Joint Royal Syphon Float	Tinkle
Y Fittings	Tempest

RANGE OF CAPACITIES

Series "A" Tank Heaters	80—325 gallons
Series "B" for Tank Heating	325—850 gallons
"Stark" Tank Heaters	100—300 gallons
Laundry Stoves	80—150 gallons

HOT WATER BOILERS

Series "B"	250— 650 square feet
Series "C"	300— 700 square feet
Series "D"	350— 2675 square feet
Series "E"	3050— 6500 square feet
Series "F"	450— 1150 square feet
Series "G," 18-inch	600— 1250 square feet
Series "G," 24-inch	1100— 2700 square feet
"Rival"	450— 2400 square feet
"Roman"	350— 2150 square feet
"Courtland"	6750—13750 square feet
Flanner Fire Box	1400—20500 square feet

STEAM BOILERS

Series "M"	175— 400 square feet
Series "N"	175— 475 square feet
Series "P"	1900— 4000 square feet
Series "Q"	300— 675 square feet
Series "R," 18-inch	400— 825 square feet
Series "R," 24-inch	675— 1600 square feet
"Hesper"	225— 2250 square feet
"Rival"	275— 1850 square feet
"Roman"	225— 1350 square feet
"Courtland"	4100— 8300 square feet
Flanner Fire Box	900—12800 square feet

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